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THE INDIAN COTTON TEXTILE INDUSTRY

AN ECONOMIC ANALYSIS

By

S. D. MEHTA, M.COM., LL.B., PH.D.

FOREWORD

By

SIR HOMI MODY

THE TEXTILE ASSOCIATION (INDIA)

April, 1953

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TO
MY FATHER
unerring source of wise counsel

FOREWORD

India has been the home of textiles from times immemorial. The fabrics which her handicraftsmen produced were unequalled for their beauty and delicacy and found their way into every part of the world. It was, therefore, appropriate in a sense that the first large-scale industry to be developed in this country should have been concerned with the manufacture of textiles. Next year will mark the Centenary of the foundation of the first Power mill in India.

The Industry occupies a very important place in our national economy. The capital sunk in it is over Rs. 100 crores, the annual output is of the order of Rs. 500 crores, and more than 7 lakhs of workers are employed, apart from the large numbers engaged in ancillary trades. With abundant labour and raw materials and a vast home market, it is not surprising that India should be in the front line of textile manufacture in the world.

Mr. S. D. Mehta has made an exhaustive study of the Industry, and the pages that follow are a witness to the ability and thoroughness which he has brought to bear upon his task. Every aspect of the subject has been included in his survey, which is a critical study of the equipment pattern, organisational set-up and financial structure of the Industry. For the purpose of the study, Mr. Mehta acquired first-hand knowledge of mill routine and practices in different centres of the Industry. The result is a thesis of considerable interest and merit, on which the author is to be sincerely congratulated. India could do with more such researches in the industrial and economic fields ; her fast growing importance as a producer of goods demands more and more of the scientific approach to the problems connected with large-scale industries.

The Textile Association (India) are the sponsors of the publication, and I hope both author and publisher will have every reason to be satisfied with the response they receive from the interests they have endeavoured to serve.

H. P. MODY.

BOMBAY,
March 6, 1953.

PREFACE

The cotton textile industry in India is a pattern of many variables, economic and non-economic. It is to an examination of the former set of variables and their relationships *inter se* that the present book is directed. There has been a constant endeavour to restrict the examination to the essentially structural, permanent aspects of the industry, welding these into an aggregative, national picture. A regional or local variation has been permitted to appear in the picture only when it modifies the national pattern, or presents the latter in a very different light than would have otherwise been the case. That this has to be often done only points to the difficulties which inhere in all studies of industrial economics in countries of great regional diversity in wages and work methods.

The present book, it is submitted, is analytical and evaluative in character. Recommendations, therefore, fall outside its scope except where they issue from the former and may not be excluded without seriously detracting from the usefulness of the analysis or the evaluation.

The cotton textile industry is interpreted in a wide sense to include besides mills, other members of the textile family as well. Powerloom factories, the handloom industry, the 'independent' processors, and for certain limited purposes, even the hosiery industry are included in the compass of the present inquiry. Cotton mills, nonetheless, constitute the focal point of the entire work. An extended interpretation of this character has two advantages : one, it ensures a broader perspective in greater consonance with the realities ; and, secondly, it facilitates a more integrated understanding of the problems and patterns in the Indian textile world.

The conclusions arrived at in this book are based on diverse sources of information.

In the first place, detailed conversance was obtained with mill routine and practices, over a period exceeding one year in more than thirty mills in Bombay, Ahmedabad, Delhi, Coimbatore, and Madura. (*see* Appendix, p. 219.) This was supplemented by elaborate, persistent questioning of over eight hundred persons connected in various capacities with the industry. Technicians at almost every level of the technical hierarchy, mill executives, managing agents, traders, trade union leaders, and handloom weavers comprise the bulk of this list. The emphasis in these personal queries was almost always on the specific problems of particular mills or mill companies, rather than on the broad issues facing the industry as a whole. This has enabled, it is believed, the generalised statements on the working of the mill industry

to have a direct, close resemblance to the actual experience of the individual units in the industry.

Other sources of information have also been tapped liberally. These include, apart from the literature existing on the subject, the information now available as a by-product of the administration of controls ; the data collected, though not always in the most useful form, in the Censuses of Manufactures ; the information contained in case law, especially industrial ; the scanty, but pertinent data to be found strewn in the uninviting reports on municipal administration ; and, the financial statements of public limited companies. To a smaller extent, biographies and sociological literature have been of help.

The impressions thus formed, and the knowledge thus gained have been sifted to arrive at a set of verified facts. An attempt, necessarily more intuitional and deductive than the first step just mentioned, has then been made to discover the connections between the facts or groups of them. The results have been verified, in addition, with historical data where available, and in the absence of a conclusive answer from the former, reliance has been placed on logical consistency.

It is not permissible to imply from the preceding paragraphs that the mass of available information necessarily provides an answer, or when it does, that it is the right one. The data (especially, the statistical) suffer from several limitations—inconsistency over a period of time, discontinuity, and the ever-present possibility of multiple interpretation. In other words, the data is surrounded to a very unusual degree by what Professor Pigou calls the 'penumbra of uncertainty'.

But if this were granted, the very considerable amount of quantification of economic magnitudes attempted in the present work may well be questioned. The justifications are three in number. First of all, the limitations of the data have been consistently pointed out and stressed, even at the risk of bringing in some discontinuity in the flow of the argument, and suffering the presence of irritating, repetitive side-phrases. This should be adequate protection against misconstruing the extent of reliability attaching to the quantified statements. Secondly, it should not be difficult to see the greater reliability of, and smaller potential for misrepresentation in an approximately quantified statement when compared to any adjectival equivalent thereof. Finally, if one be permitted to benefit from hindsight, quantitative statements (even when only rough and crude) do not breed blind spots in other generalisations, which in their very nature, have to be exclusively qualitative.

To sum up, the prospecting for information has extended far and wide, though the assaying has been done on the basis of criteria which sometimes appear to be unduly cautious. The resulting statement of

the economics of the cotton textile industry in India is in many significant respects materially different from the picture which extant literature seems to suggest or to impute.

One valid comment, however, may be made. The implications, logical and factual, of every trend noted herein have not been usually worked out in the larger context of the total Indian economic situation. Although it is recognised that cotton textiles constitute the dominant facet of the growth of large-scale industry in India, analogous extension of the results to other fields of Indian industry is generally avoided. This is not to deny either the permissibility or the significance of interpretation with the aid of analogy. This voluntarily imposed restriction is only a recognition of the fact that Indian industrialisation is a much larger canvas, needing its own, different paints and brushes. The author is at present actively engaged in such a larger study.

The findings of this study differ in several important respects from its predecessors. These differences extend beyond the nature and scope of the inquiry. To a very large extent they arise from the adoption of hitherto neglected criteria of judgment, or the application of unidentical degrees of emphasis.

A more explicit statement of the more important of these evaluative criteria, and their most significant implications should aid in a better understanding of the pages to follow.

Thus, a clear understanding of the principles of textile technology is fundamental to a proper, and often, correct understanding of the economics of the cotton textile industry. The acceptance of this first principle leads, directly and indirectly, to several other results of consequence. Firstly, textile technique is seen to be divisible into two types of processes, physical and chemical. The former usually (though not always) precede the latter, and in general, both are performed on numerous machines which are replicas of each other, rather than one huge machine which is true, say, of a steel furnace or a cement kiln. Indivisibilities of output associated with large-scale machines, it then follows, are not of paramount consequence in the cotton textile industries. As a corollary, the search for optimum physical scales of operation is likely to be largely elusive. Secondly, the cotton textile industry is *par excellence* illustrative of a multi-product industry of non-homogenous products. Aggregates of output, whether of yarn or of cloth, have therefore different meanings in different contexts and could be misleading, not only with regard to the quantum but also with regard to the direction of the change. The implications of these in measuring changes in industrial activity have not always been recognised. Thirdly, the necessity follows, almost automatically, of appraising the equipment patterns and their evolution, and allowing the appraisal to react fully on our understanding of almost all other facets of the industry.

Likewise, the impact of wage levels (or, rather differences therein) on the expansion patterns of the cotton mill industry has not always been adequately realised. Viewed in that light, the early concentration of the mill industry in Bombay City is equivalent to industrial agglomeration at a single level of labour costs. The later deglomeration of the industry, it follows, is the creation of an industrial structure which is differentiated not only in terms of regional locale but also in terms of wage levels. In terms of national income analysis, it denotes a reduction in the capacity to generate money incomes in each succeeding unit of cotton mill expansion in real or physical terms. Deviation in rates of regional expansion from the national pattern, therefore, becomes characteristic of the Indian mill industry.

Another factor of some consequence may also be mentioned. Prior to the partition of India, national production was always a smaller quantity than national demand (and usually, supply). In other words, the growth of the mill industry followed in the wake of an extant demand, denoting a continual (though not always easy) displacement of the foreign supplier, rather than a direct, parallel increase in the total internal demand (or, supply).

This statement of the more significant differences in approach and evaluation, it is to be hoped, leads to a better understanding of the succeeding analysis of the structure of the cotton textile world.

The country is now committed to a policy of planned development, as enunciated by the Planning Commission. It will, therefore, be useful to examine the facts presented by them, the principles laid down, and the programmes recommended by them in their monumental Report, in the light of the conclusions emerging from the detailed analysis undertaken in this book.

The Planning Commission have envisaged the following production targets for the cotton mill industry and the handloom industry :

	<i>Production in 1950-51</i>	<i>Production in 1955-56</i>
1. Yarn (m. lbs.)	1,179	1,640
2. Mill Cloth (m. yds.)	3,718	4,700
3. Handloom Cloth (m. yds.)	810	1,700

To put it alternatively, the Planning Commission visualise an increase in output of 1,872 million yards, the mills adding 982 million yards, and the handlooms, 890 million yards. The mills are required to add only about 30% to the volume of their output in 1950-51 in the next five years, whereas handlooms are expected to raise their output by no less than 109%.

The Planning Commission, talking in more general terms, call for an economic environment in which village industries have a reasonable

chance of succeeding, and for this purpose, 'mutual exchange' of goods on a 'local' basis is necessary, and should be developed, according to them. They call for a co-ordinated production programme for both the large-scale and the small-scale industries, to be organised in general terms to start with, and in closer integration at later stages.

A co-ordinated programme of production will comprise one or more of five items : reservation of spheres of production ; non-expansion of the capacity of the large-scale industry ; imposition of a cess on the large-scale industry ; arrangements for the supply of raw materials ; and, finally, co-ordination of research and training facilities in the handicraft industry. The programme, as a necessary implication, will involve a measure of control by the Government on the organised sector of the industry.

The cess on large-scale industry, it is suggested, has a two-fold aim, although it is recognised that it must of necessity be small. Firstly, it should act in the direction of equating the costs of production for the two sectors, and secondly, it must provide funds for technical and other improvements in the small-scale industry.

The Planning Commission's reasoning is revealing of many inconsistencies of fact and logic, as also of a failure to carry their own fundamental assumptions to the logical conclusion.

The targets of output in the handloom sector, supposedly based on full utilisation of all handlooms, are unrealistically high. They imply a level of production far above that achieved at any time in the history of the handloom industry. They assume, very unrealistically again, that output in the handloom industry can expand to 1,700 million yards, without leading to a simultaneous increase of great dimensions in the number of handlooms. One has only to recall the addition of nearly one million handlooms in the last ten years, notwithstanding the general shortage of yarn, to realise the dangers of uncontrolled expansion in an industry, whose economic roots largely belong to the past and not to the present. It is difficult to comprehend how an industry whose marketing structure is geared for the bulk of its output to tradition and habit, can hope to achieve so high a rate of annual output in a period of just three years from now.

More fundamentally, the question arises : does the acceptance of the vital role of small industry imply the continuance and even expansion, of every industry organised on that basis ? Does the Planning Commission recognise the fact that any rapid rate of economic advancement necessarily involves the withering away of archaic, uneconomic techniques of production ? How is the Planning Commission's insistence on technical improvement and the use of electricity as a means of power to be reconciled with its plans for increasing the output on handlooms ?

While none should grudge all reasonable measures to effect the transition from the handicraft to the machine stage smoothly, and with the minimum of social disturbance, one fails to see the rationale behind a planning approach that negatives the very basis it enunciates.

One wonders whether an economy which operates on the basis of a declared aim of developing its productive resources and technique at a high pace affords any reasonable prospect for "creating an economic environment in which they (village industries) have a reasonable chance of succeeding", and "growing on the basis of local demand". Are the latter consistent with the former? Is it possible to have rapid economic progress, when the price for it, namely, the discarding of old techniques, is not acceptable? It is indeed difficult to escape the feeling that the Planning Commission have evaded the problems arising from technological change, and to the extent to which the latter is synonymous with economic progress, they have taken cognisance only of the credits and ignored the debits altogether.

The Planning Commission's faith in the efficacy of reservation is rather difficult to understand. Reservation helps only those who are engaged in the production of the varieties reserved, or those who can shift to the production of the latter, and it is against the facts to grant that these two categories cover the entire handloom industry. Alternatively, reservation is only a partial palliative. Secondly, it ignores the possibility of competition from the 'powerloom' industry, which it appears, will be the major beneficiary from any such policy. Thirdly, it underestimates the possibilities of customers getting adjusted to substitutes of mill origin (especially, in the case of sarees) rather than to handloom products. Fourthly, the tremendous organisational implications on the side of marketing, finance and production do not appear to have caused any concern to the Planning Commission. Fifthly, the disastrous impact of any drastic policy of reservation on the established industrial economy appears to have been lightly dealt with by the Planning Commission. Sixthly, it is not realised that reservation only offers scope for additional production on the part of the handicraft industry. It does not amount to a diversion of raw material supplies from the large-scale to the small-scale industry, particularly when the former can easily take to the production of other permitted varieties. And, finally, the Planning Commission have failed to appreciate the tremendous costs of a recurring character involved in their plea (see Chapter IV, pp. 114-115), provided the handloom weaver was expected to earn a *reasonable* wage for his labours.

In fine, the Planning Commission have not appreciated all the implications of their avowed policy of rapid industrial progress; they have, as a result, recommended targets for the handloom sector which are wellnigh impossible to reach, without appraising the full costs or

the efficacy of the methods they have advocated to enable the targets to be approached.

A very pleasant duty remains to be performed. As a recipient of willing co-operation from many quarters, the author has incurred obligations, all of which may not be even enumerated, for which the expression of thanks is only an acknowledgment of gratitude.

To Seth Bhogilal Lecherchand of the Shree Ram Mills, Bombay, the author is indebted for unequalled facilities of study, over a period of six months.

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To Professor C. N. Vakil, under whose guidance this study was carried out in satisfaction of the requirements laid down by the University of Bombay for the Ph.D. Degree in Economics, I am thankful for valuable advice and active encouragement unfailingly made available.

The Textile Association (India), the premier Indian organisation of textile technicians and administrators, are branching into a new field of activity with the publication of the present book. I sincerely thank them.

Sir Homi Mody has been kind enough to find time from his diverse activities to go through the book, and has contributed the Foreword. To him I am deeply grateful.

S. D. MEHTA.

BOMBAY,
March, 1953.

THE TEXTILE ASSOCIATION (INDIA) (Regd.)

GANESH BHUVAN, SUPARIBAUG ROAD,

BOMBAY 12.

The Textile Association (India), a body of textile technicians and administrators, founded in April 1939, has grown into an all-India organisation. One of the leading institutions of its kind, its varied activities cover an all-India field through its ten branches located in Ahmedabad, Baroda, Bombay, Khandesh, Madhya Bharat, Madhya Pradesh, Sholapur, South India, Uttar Pradesh and West Bengal.

With the service of the Textile Industry as its general aim, the Association promotes the science of Textile Technology and grants diplomas in Associateship and Fellowship of the Association. The Association confers its Honorary Membership on individuals who have rendered distinct and meritorious services to the industry. Dissemination of up-to-date knowledge through its quarterly journal, *Textile Digest*, meetings and annual conferences in which papers are read and debates held on important matters touching the Textile Industry, occupy an important place in the activities of the Association. Reading Rooms, Circulating Libraries and Reference Libraries are similar other activities. Essay competitions with prizes and medals are organised to encourage research in the problems of the Textile Industry. The Association has an Employment Bureau to guide members in securing jobs and better prospects.

The Association is represented on several Government and quasi-Governmental bodies including, among others, the Indian Standards Institution, and the All-India Board of Technical Studies.

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PART ONE

STRUCTURAL ASPECTS

CHAPTER I

THE EQUIPMENT PATTERNS

A fascinating, but hitherto almost unexplored aspect of the evolution of the cotton textile industry is the nature and composition of its mechanical equipment. This indifference has two sides. (a) The bulk of such changes is initiated, explored, and developed in countries other than India, and their usually later recognition, and still slower adoption by indigenous cotton textile units reduce the changes to smoothly inclining upward curves, enabling the more casual observer to forget their existence and, therefore, to ignore their consequences. (b) The absence of reliable (or, in some cases, even incomplete) data about technological variations renders the task of the economic analyst more difficult.

The latter, as we shall see, is no insuperable obstacle to evolving a picture in broad outline. And, the former has not only had very important economic implications on more than one occasion in the past, but it has been one of the most important factors in determining competitive efficacy, unit-wise as well as centre-wise. To cite a few illustrations in support : (i) it is clear that the competitive struggle during the inter-war period between the Bombay mills and the Japanese industry was in essence, apart from the limited, transient influence of depreciating exchange favouring the Japanese industry, a record of the slow technological progress of the mill industry in Bombay. The same rate of technological progress, however, compared very favourably against mills outside Bombay and effectively buttressed the latter's competitive position in relation to the former; (ii) a vital factor in adding to the competitive strength of the handloom weaver during 1900-1940, was the substitution by the fly-shuttle of the throw-shuttle loom which enabled almost a doubling of production, concomitant with a drastic reduction in the physical effort involved. The speed and degree of the adoption of the fly-shuttle has led to drastic variations in inter-regional competitive capacity in the handloom sector of the cotton textile industry.

In other words, the relationship between technology and economics is a very delicately balanced one, and is susceptible to drastic change over a period of time, although it rarely partakes of the more rapid, erratic short-term fluctuations in the economic balance of the industry.

A. EVOLUTION—ITS VARIED ASPECTS

Early British Influence and its Effects.—Contrary to popular belief, the cotton mill industry was never exclusively Indian, looked at from any point of view—whether finance, technique, personnel or ownership.

C. N. Davar's Mill (1854)¹ was owned partially by Englishmen, and the technique and personnel were unmistakably Lancastrian in character.² In all of Ranchhodlal Chhotalal's efforts (spread over 1846 to 1856, when he succeeded in setting up the first mill of Ahmedabad) the Englishmen's contribution is vital.³ Killick Nixon & Co. laid the foundation stone of their Kohinoor Mills as early as 1870, quietly ignoring the effect of their action on the Lancashire principals whose cotton goods constituted their chief line of business till then.⁴ In later days, the Sassoons,⁵ Greaves and Cotton,⁶ Bradbury & Brady⁷ interests dominated the industry in Bombay, while many others put up mills upcountry, amongst them being the Harveys of Madura Mills,⁸ and the Staneses⁹ of Coimbatore Spinning and Weaving Mills, and some others in Calcutta and Cawnpore. Indeed, no more striking evidence of British domination in the earlier stages of cotton mill growth can be found than the fact that the Millowners' Association, Bombay, had common office arrangements with the exclusively European Bombay Chamber of Commerce.¹⁰

This early phase of non-Indian domination by way of ownership had counterpart manifestations in various directions : the managerial and technical personnel and manufacturing processes and practices had a strong Lancastrian bias and origin that has persisted hitherto ; there was created within the factory a linguistic and cultural barrier that divided the workers from their executives, providing the most important base to what later evolved to be the jobber system as a means of controlling and communicating with the employees. But the most lasting and most important effects thereof were on the equipment patterns : multi-storeyed buildings were built, as was done in Lancashire ; the machinery installed was almost exclusively British ; and, gradually, there evolved a plant structure which for its maintenance required regular supplies of spare

1. The first cotton mill was put up in India in 1817, by an Englishman, but it failed. The Fort Gloster Mills (1830) was put up in Bengal under European management.
2. At the time of writing it is not possible to trace the source from which the information was originally jotted down.
3. See Badshah, B. R., *Rao Bahadur Ranchhodlal Chhotalal*, pp. 11, 19, 38 & 39.
4. Wilfrid Russell's account of Killick Nixon & Co. in *Indian Summer*, pp. 34-5.
5. The first mill of the Sassoons was put up in 1888.
6. *The Indian Textile Journal, Golden Jubilee Souvenir, 1940*, pp. 681-2. Greaves came out in 1870 as Manager of Landon Mills, Broach, floated soon after the Empress Mills, and later 7 others. He also took up two other managing agencies. (The Landon Mills was floated by an American of the same name, *vide* Badshah B. R., *op. cit.*, p. 19.)
7. *Ibid.*, pp. 328-9. Brady & Bradbury started their operations in the 1890's.
8. *Ibid.*, p. 649. Article by Sir James Doak, *Cotton Spinning in South India*, supplies the following details: 1869—Lord Napier initiates a survey for indicating the possibilities of cotton spinning in South India; 1880—A. & F. Harveys launch Tinnevely Mills Co. Ltd., to be followed by Coral Mills (1887) & Madura Mills (1889).
9. *Ibid.*, p. 650. 1888 was the year.
10. Sir Ness Wadia refers to Sir John Marshall, the first common Secretary who served both the bodies from 1884 to 1898. See the *Indian Textile Journal*, 1945-46, p. 886.

parts of British origin, and made extension of older units more preferable with machinery of the same make as the existing mechanical set-up. This tendency was aided by the new Indian technician nurtured in these traditions and his distrust of machinery other than English, from which he has been getting only slowly relieved during the last twenty-five years.

Earlier Phases : Horizontal Organisation.—As a consequence, the earliest patterns of Indian ¹¹ mill growth showed significant tendencies towards the formation of single process (spinning or weaving) units, as is evidenced by the following statistical data, relating to the last decade of the nineteenth century :

—				Cotton Spg. & Wvg. Mills	Weaving Mills
1894	...	...	...	81	49
1895	...	...	...	83	50
1896	...	...	...	88	49

Source : Judicial and Administrative Statistics for British India, 1896.

Note : The figures relate to British India only.

Vertical Integration and Addition of Loomage.—But, cotton mills were a highly profitable trade ¹² in those days, and the incentive to expand worked both ways with spinning mills wanting to add looms, and weaving mills wanting to add spindles to supply their own yarn, apart from new-comers to the trade who desired to get their share of the world's biggest export market for cloth that India continued to be till 1914. That the tendency to add loomage originated in the desire to offset the loss of the Chinese market in yarn, despite the generality of its acceptance, is not capable of unqualified acceptance. The statistical evidence adduced below is unmistakable ¹³ proof of the existence of the tendency to add loomage long before the China market in yarn was even acquired :

				Looms installed in Bombay City.	Looms installed in India
1865	...	...	...	3,400	.....
1876	...	...	...	8,000	9,100
1885	...	...	...	12,000	16,500
1890	...	...	...	13,000	23,400
1900	...	...	...	22,000	40,124
1910	...	...	...	41,900	82,700
1915	...	...	...	48,800	108,000

Sources : Various official publications.

11. The most outstanding example of this early tendency is the Rachel Sassoon Mills, which the Sassoons purchased in 1895, to reconvert it into a loom-shed of 2,001 looms.
12. See the later chapter: Financial Aspects.
13. The Kohinoor Mill, started in 1868 by Killick Nixon & Co., took to weaving

It is, therefore, not justifiable to attribute any great causal significance to the loss of the China market ¹⁴ in yarn as a factor in the expansion of loomage in India.¹⁵ The vast market for yarn and cloth within the country, and the high general level of profitability in the cotton mill industry are sufficient explanations for the addition of loomage, as well as for vertical integration, a process that has received wide notice.^{16 17} The consequent increase in the size of the average unit, as measured in terms of spindles and looms has also been frequently pointed out. The position as it stands today is briefly tabulated below :

The Cotton Mill Position in India (1950)

	Number	Spindleage	Loomage
(1) Composite Mills (Spinning & Weaving)	274	90 lakhs	192,000
... .. ing Mills	90	18 lakhs	.....
Total	364	108 lakhs	192,000

Source: Textile Commissioner's Statistics.

Some major qualifications, however, are required to be made. Firstly, the growth of the composite units has not been able to prevent the growth of a tremendous industry (called by the misleading name—powerloom) having now from 15% to 20% of the loomage in the 'mill' sector. In the second place, the organisation and growth of the processing (finishing) sector of the industry, both as part of and distinct from the 'mill' sector, is not revealed above. The growth of the 'organised' sector of the handloom industry is another vital aspect of the equipment pattern that cannot obviously be reflected in the above table. Fourthly, the growth of other sectors of the cotton textile family—hosiery, belting, tapes and niwars, cotton healds, etc., cannot be discerned from current academic concepts of cotton mill equipment, just as they fail to distinguish spindleage according to the fineness of the counts of yarn spun. And, finally, the gradual replacement of manual by less manual or mechanised processes—for example, the widespread adoption of power reels in the place of hand reels, the adoption of high

right from its inception, benefiting from the competitive cheapness of Indian labour in the half-century preceding the First World War. *Vide* Wilfrid Russell, *op. cit.*, p. 36.

14. The argument does not, it should be clear, preclude the possibility of a few mills very dependent on the Chinese market being affected. For such an example, see *the Indian Textile Journal, Golden Jubilee Souvenir* (p. 681) where the strain on some mills of Greaves Cotton & Co. is recounted.
15. In Ahmedabad, which at any rate had no China market to cater to, the same tendencies were at work. See written statement before the Tariff Board, 1926, Vol. II, p. 62.
16. Dr. N. S. R. Sastry, *A Statistical Study of India's Industrial Development*, p. 79.
17. Dr. M. M. Mehta, *Structure of Cotton Mill Industry in India*, p. 41.

speed preparatory processes prior to weaving in place of the slower, more labour-consuming earlier machines, the meteoric rise in the use of petrol-driven vehicles in place of the bullock cart common only thirty years back, the use of the more modern types of weighing machines and the substitution of manual processes of bleaching and dyeing—cannot appear from the foregoing table. And yet, these are among the most significant developments that have affected the cotton textile industry of India, during the last fifty years or so.

It is to the analysis of these and allied trends and their quantification that the rest of this chapter is directed.

B. THE MECHANICAL ORIENTATION : PERIOD DISTRIBUTION OF TRENDS

The first step in appraising the equipment patterns is to secure general conversance with the changes that have taken place, fitting them into a rough period-distribution. Such an attempt is made in the tabular statement that follows. (See pp. 6-8.)

The trends sketched above are a fair approximation of the major shifts in the equipment patterns, although no claims to regard the treatment as exhaustive, or the period-distribution as a rigid chronological structure are sustainable. The following nomenclature for each stage of the machine orientation, in spite of its even lesser claims to precision, serves as a quick résumé :

1. Upto 1890's : Mule spinning and coarse, plain weaving.
2. 1890—1918 : Ring-mule spinning ; and less coarse, plain weaving and manual finishing.
3. 1919—1930 : Finer ring spinning and more variegated, finer weaving ; less manual, more varied finishing.
4. 1930—1939 : Loom variegation ; still finer spinning and finishing ; and product diversification.
5. 1939—1945 : Improvisation ; utilisation of indigenous machinery.
6. 1946—to date : Capital intensification and superior mechanisation.

C. QUANTIFICATION OF THE EQUIPMENT TRENDS

Integration of Spinning and Weaving.—At the outset, it is necessary to obtain a clear impression of the extent to which mills that spin yarn also undertake the transformation of yarn into fabrics and the magnitude of the movement away from the horizontal patterns of the 1890's to which we referred earlier. (For Table, see p. 9.)

Period	Spinning Equipment	Doubling Equipment	Weaving Equipment	Finishing Equipment	General Equipment
Upto 1890's	Throstle } Spindles. Mule }	...	Plain, Lancashire looms; weaving coarse, and of slow speed.	(1) Small beginnings with yarn dyeing and cloth bleaching, by more progressive concerns. (2) Use of natural dyes. Co-existence of separate manual dyeing and bleaching industry.	(1) Essentially manual handling. (2) Use of owned power, coal being the main source. (3) Natural conditions of environment, e.g. humidity in Bombay regarded as great advantage. (4) Group drive of machines.
1890-1918	(1) Discarding of throstle spindles; (2) Even mules lose ground to ring spindles; (3) The addition of weft spindleage to keep pace with loom expansion; and (4) General introduction of flat cards in place of roller cards.	...	(1) Plain weaving still the order of the day. (2) Attempts at product diversification, e.g. production of madapolams and mulls gathers ground.	(1) Progress of dyeing probably more rapid than bleaching. (2) Mechanisation of bleaching and dyeing starts. (3) Calendering becomes widely accepted.	(1) Outside sources of power become available. (2) Electric lighting becomes general. (3) First attempts at mechanical humidification.
1919-30	(1) Ring spindles becomes the rule of the day. (2) Finer spinning, 40's and above, is more widely adopted. (3) First combers installed.	(1) Small beginnings of installation of doubling equipment.	(1) The installation of wider width, and 'dobby' looms assumes a highly accelerated pace. (2) Jacquard attachments and drop box looms make progress. (3) Blanket making looms: installation starts. (4) Automatic looms also make a start.	(1) Dyeing and bleaching increase very rapidly. (2) First mercerising, singeing and raising plants installed.	(1) Attempts at improving humidification and ventilation become more widespread. (2) The development of allied industries, hosiery, braiding, and of mills' engineering departments manufacturing spares. (3) The last development—of mills' engineering sections—makes machinery adaptations more flexible and less costly.

4. 1931-39	<p>(1) Ring spindles expand, as mule spindles steadily decline.</p> <p>(2) Conversion to tapedrive spindles and ball-bearing spindles starts.</p> <p>(3) Combing equipment imported in larger quantities, as spindles designed to spin finer are installed, as old spindles are converted to serve the same purpose.</p> <p>(4) Mills exclusively dependent upon 'fine' spinning come into existence.</p>	<p>(1) The bulk of Indian doubling equipment is installed.</p> <p>(2) Both 'dry' and 'wet' doubling undertaken.</p> <p>(3) Some conversion of old spinning frames or roving frames to 'doubling' equipment.</p>	<p>(1) Dobby, Jacquard, and dropbox looms continue to make progress; so too, special looms.</p> <p>(2) Automatic looms make slow, but sizeable progress, with wider adoption.</p> <p>(3) Plain looms designed for special fabrics, e.g. umbrellas cloths, installed.</p>	<p>(1) Mercerising facilities widely increase.</p> <p>(2) Printing, dyeing and bleaching share the same tendency.</p> <p>(3) Specialised dyeing processes, e.g. mineral khaki, also developed.</p> <p>(4) Various types of specialised calendering equipment installed.</p>	<p>(1) Humidification of superior type makes rapid progress.</p> <p>(2) Electric motor drives widely accepted.</p> <p>(3) Individual motor drive makes appearance.</p> <p>(4) Larger packages, e.g. 6' lift bobbins and 10' cans become respectable manufacturing practices.</p> <p>(5) Improved equipment, both in the machinery and in the controlling instruments, in the sizing department.</p> <p>(6) High speed winding and warping machinery gradually replaces the slower machines of the past.</p> <p>(7) The capacity for improvisation increases rapidly.</p> <p>(8) Single process blowrooms gradually come in.</p>
5. 1939-45	<p>(1) Improvisation and adjustments, and the growing need and capacity to make them are the dominant features of this period.</p> <p>(2) Indigenous machinery and accessories are tried out widely, and win a large measure of acceptability.</p> <p>(3) All the trends in the preceding period continue to operate, although at unequal pace.</p>				
6. 1946 to date	<p>(1) Conversion to high draft, tape drive, and ball and roller bearing spindles—among the most widely adopted changes.</p> <p>(2) New machinery increasingly eliminates intermediate processes.</p>	<p>(1) Considerable additions to doubling equipment.</p>	<p>(1) Wider adoption of automatic looms.</p> <p>(2) Increasing use of looms made in India.</p> <p>(3) Increasing adoption of automatic attachments.</p> <p>(4) Slightly decreased use of wider looms probable.</p>	<p>(1) Dyeing and bleaching expand further.</p> <p>(2) Mercerising stages very rapid advance</p> <p>(3) 'heese dyeing plants gradually replace dyeing of reeled yarn.</p>	<p>(1) Greater use of outside sources of power than ever before.</p> <p>(2) Wide-spread adoption of fluorescent lighting and improvements in natural lighting.</p>

Period	Spinning Equipment	Doubling Equipment	Weaving Equipment	Finishing Equipment	General Equipment
	<p>(3) Bigger diameter rings and higher lift packages receive considerable adoption.</p> <p>(4) Non-British machinery (especially American) receives first major trial.</p> <p>(5) Widespread installation and extension of comber departments.</p> <p>(6) More equipment for production of special yarns.</p> <p>(7) Spinning of staple fibre.</p>		<p>First adoption of mechanical drawing-in and rearing machines.</p> <p>First sizeable use of warping machines.</p> <p>Increasing use of a variety of gauges in the weaving departments.</p>	<p>(4) Printing equipment both of foreign and Indian makes, substantially added to.</p> <p>(5) Bigger and more effective calendaring equipment adopted.</p> <p>(6) Screen-printing becomes a formidable rival to calico printing.</p> <p>(7) Isolated adoption of continuous processes of dyeing and bleaching.</p> <p>(8) Better 'control' devices in almost every process.</p>	<p>(3) Limited recognition of the value of colour schemes, inside the plant.</p> <p>(4) Mechanical handling—in various degrees—assumes some significance.</p> <p>(5) High-speed winding and warping machinery becomes very widely prevalent, and super-speed winding and warping machinery adopted in some of the biggest mills.</p> <p>(6) Slasher sizing machines increasingly favoured.</p> <p>(7) Rope drives become obsolete.</p> <p>(8) Group drives widely replaced by individual motor drives in the 'ring frames' department and by smaller group drives in the weaving shed.</p> <p>(9) The expansion of departments producing various allied products enables a much greater product diversification to take place, amongst the newer developments being garment-making and embroidery plants.</p> <p>(10) Increasing use of office equipment such as comptometers.</p> <p>(11) First trials of accounting machinery.</p>

	1906-07	1950
1. No. of mills that exclusively spin	106	90
2. No. of mills that spin as well as weave	101	274
3. Total number of spinning units	207	364

Sources: (1) Statistics of British India, Vol. I, 1918.
(2) The Textile Commissioner's Statistics.

Concomitant with the decline in the number of units engaged exclusively in the spinning of yarn and their still greater reduction in terms of proportion has been a drastic shift in the geographical locale of their operation. In 1906-07, their distribution pattern had the same regional dispersion as the entire industry; in 1950, well over 55% of the spinning units and over 65% of the spindleage is located in South India. Furthermore, the redistribution has been far more drastic than appears from the above figures, for not more than a score of the existing exclusive spinning plants existed as such even in 1910.

The Spinning Equipment.—Well over 95% of the Indian spindleage installed in 1950 comprised of ring spindles, the remainder being made up by mule spindles, waste spindles and chapon spindles in that descending order of importance. The spinning rooms of mills that spin exclusively do not usually produce weft yarns on special types of frames, as many mills combining spinning and weaving do.

The changes that have come about in the nature of the spinning equipment (once the large-scale substitution by ring of mule spindles was over)¹⁸ have not been either very rapid, nor very drastic until recently. There was a gradual switch-over to the production of higher counts of yarn, dating back probably to the earliest days of cotton mill development, which was somewhat accelerated in the inter-war period. The statement submitted below *approximately* traces this evolution, almost as far back as figures are available :—

Year	Average Count
1907-08	13s
1919-20	17s
1923-24	18s
1933-34	20s
1938-39	27s
1944-45	16s
1949-50	29s

Source: Calculated from official figures.

18. This substitution of the mule by ring spinning, surprisingly enough, was first tried out extensively by an Indian—J. N. Tata. For details see Harris F. R.,

Pointing to the same conclusion are the estimates of the number of spindles¹⁹ engaged in the spinning of finer cottons—Egyptians—and therefore, of yarns, as collected in the half-yearly censuses of the International Federation of Master Spinners, submitted below :—

Period : half-year ending	No. of Spindles Spinning Egyptian Cottons
June 1912	20,000
January 31, 1930	31 000
July 30, 1935	740,000
January 31, 1939	402,000
July 30, 1949	1,745,000

Source: International Cotton Statistics, published in the International Cotton Bulletin.

Allied to this tendency to spin finer yarns, is the installation of comber equipment, which in 1946 was estimated to match the production of 10 lakh spindles,²⁰ and the drive towards better temperature and humidity control. And, to it is also linked the move to increase the number of spindles per worker (or sider), now approaching 1,200 spindles in isolated cases.²¹

Certain structural implications of finer spinning have not been consistently appreciated in the Indian literature²² on industrial economics which has exclusively emphasized the figures of aggregate production to indicate upward or downward movements in productive effort. We briefly state these :

- (1) The production of yarn in terms of weight, per given unit of time, is drastically reduced as the fineness of the yarn increases. The magnitude of the difference may be appreciated from the figures submitted below :—(For Table, see p. 11.)
- (2) The cotton consumption per spindle per unit of time, therefore, declines as higher counts are spun.
- (3) The fineness of the yarn also means that on a bobbin of identical diameter a substantially greater length of yarn can be wound, and since a piece of cloth is the sum of the lengths of all its wefts and all its warps, there would not be anywhere near the same reduction in the yardage of cloth produced, although some reduction in the yardage of cloth produced is

Jamsetji Nusservanji Tata, pp. 32-33 ; and Wacha D. E., *The Life and Work of J. N. Tata*, pp. 35-6.

19. Another aspect of the same situation—lack of standardisation of counts within a mill, is discussed in a later chapter.

20. Worrall's *Engineering Diary*, 1946, p. 31.

21. For example, the Calico Mills of Ahmedabad.

22. Recent discussions on the fall in production in the cotton mill industry almost never mention the sharp, upward movement in average count, noticed earlier.

Count	Theoretical Rate of Production (lbs. of yarn per 10,000 spindles per hour)	
	American Data	English Range
12s	830	720—850
15s	580	530—630
20s	440	350—430
30s	270	200—260
40s	190	130—180
50s	130	90—120
60s	90	70—90
70s	80	60—80
80s	60	50—60

Source: Cotton Spinning, Productivity Team Report, 1949, p. 55.

likely, because the types of fine cloth woven in India require a larger number of reeds and picks per inch than their coarser counterparts.

- (4) Therefore, the number of spindles required to produce the yarn equivalent of the output of a loom is greater in the case of higher counts.
- (5) Damage at subsequent stages of production and the proportion of damage are factors of far greater importance to a fine count mill than to a coarse count mill.
- (6) As may be appreciated from the preceding statements, the preparatory machinery preceding spinning must handle for a finer count mill much smaller quantities of cotton, than would be the case in a coarser mill with the same spindleage. This internal balance of preparatory with final spinning machinery drastically limits sharp variations in the average count spun besides the limits laid down by the difference between the various categories of spindle equipment as to the range of counts of yarn spinnable in each category.

Not all varieties of cloth that are costly are, however, made from the higher counts of yarn, and price differentials between types of cloth are not the exclusive, or even the main, function of the fineness of the counts of yarn utilised as warp and weft.

A change of a different character is also noticeable in the materials processed in Indian spinning plants. The increasing use of materials other than cotton—rayon staple, being the most important, being spun on no less than 400,000 spindles in 1951²³—however, yet fails to reveal any distinct upward or downward trend. The data for 1946 to 1948,

23. International Cotton Statistics, *The International Cotton Bulletin*, October 1951, Statistical Sections.

covering about nine-tenths of the cotton spinning industry, are submitted below :—²⁴

—			Yarn made, wholly or partly, from any other fibre than cotton, for sale	Basic materials consumed other than cotton
1946	...	...	47.73 m. lbs.	9.99 m. lbs.
1947	...	...	5.34 m. lbs.	2.07 m. lbs.
1948	...	...	00.05 m. lbs.	2.68 m. lbs.

Source: Census of Manufactures, Vol. II, 1946 to 1948.

Partly, the existing cotton spindleage has been adapted to the above uses, and for the rest, distinct, separate equipment existing in and as allied departments is utilised.²⁵

Finally, some technological changes of recent but widespread use and consequence may be mentioned.

As early as 1946, Worrall's Engineering Diary estimated that 50% of the ring spindles in India were on high draft systems, tape driven. Since that date a very considerable amount of replacement and reconversion have taken place,²⁶ and it is not improbable that over 80% of the ring spindleage installed in 1951 had been converted to these systems,²⁷ and in view of the existing programmes of many mills, high drafts and tape drive are likely to become universal in the next few years.

Another technological change, namely, short-cut processing, is limited in its adoption, as a rule, to the newer and to the bigger mills in the country. By eliminating some of the processes (usually the inter and the roving processes, and sometimes a head of the draw frames) considerable economies have been effected by individual mills in their labour requirements.²⁸ Its use is likely to spread widely as competing

24. The first column obviously includes considerable quantities of waste yarn.

25. The most outstanding example of the operation of both the tendencies is the Bangalore Woollen, Cotton and Silk Mills of Mysore. It has 50,000 cotton and 72,000 woollen spindles, and 1,147 cotton and 133 woollen looms.

26. In almost all the mills visited by the writer, conversion was either going on or had been completed recently.

27. A substantial number of the smaller, and not a small proportion of the bigger mills in India have always been regular purchasers of reconditioned and second-hand machinery. Their insistence, naturally enough, is even more for reconversion rather than replacement of their machinery. The preference for second-hand machinery is the least strong in the case of Bombay and the bigger mills and the greatest in the case of the smallest and non-Bombay mills.

28. The labour requirements for (A), the conventional Indian mill on average count 14s, and (B), another mill on identical counts and with similar blow room and carding arrangements but spinning from single inter bobbins on high draft ring frames with a higher lift and a bigger ring diameter are as follows: A: 16.6 men per 1,000 spindles; and B: 8.5 men per 1,000 spindles, the production per man-hour being 3.30 lbs. for Mill A and 7.81 lbs. for Mill B. See Kapur R. N. & Agarwal S. C., *Low P.M.H. in Indian Mills*, a paper published in the All India Textile Conference Souvenir, 1951.

newer mills, wholly oriented in many cases to these newer techniques, come up in sizeable numbers in the next few years, and as the replacement programmes of the older, progressive mills come to completion, taking the industry as a whole to a new, higher basis of machine orientation.

There is another group of changes, varied and small individually, but of considerable magnitude in terms of investment, and in the upward levelling of efficiency. It is not easily quantifiable, and the broad features already mentioned in our tabular statement is all that can be done.

Such, in broad outline, is the pattern of spinning equipment in the cotton mill industry of India.

The Doubling Equipment.—Unlike the industry in the United Kingdom,²⁹ doubling of yarns is in India in most cases an integral part of the cotton mill industry. Our ring doubling spindlage is probably around 475,000, about 440,000 being installed in mills, some 10,000 to 20,000 being with powerloom factories, and the remainder being with firms specialising in 'doubling' yarn on a commission or flat rate basis for others. The distribution of 'doubling' equipment in the 'mill' sector of the textile industry is not in any statistically significant relation with the ring or mule spindlage possessed by the mills. There is, however, some remarkable concentration of doubling equipment, with a comparatively small number of concerns, as may be seen below :—

Region	No. of Mills having							Total Doubling Spindlage
	Upto 500 Doubling Spindles	500 to 1,000	1,000 to 2,000	2,000 to 3,000	3,000 to 5,000	5,000 to 10,000	More than 10,000	
Bombay City ...	4	4	13	13	10	6	...	137,000
Bombay Presidency (excl. Bombay City) ...	11	17	27	8	5	8	1	153,000
Bengal ...	2	1	7	...	...	...	...	10,400
Madhya Bharat ...	4	2	5	...	...	...	...	9,700
Madhya Pradesh ...	4	4	2	...	...	1	...	12,400
Deccan ...	2	4	...	...	...	...	...	3,000
Madras ...	5	10	6	3	...	...	2	56,400
Mysore ...	1	3	1	2	...	1	...	17,300
Uttar Pradesh ...	4	4	3	...	1	1	1	30,000
Rest of India ...	9	10	...	2	...	...	...	8,200
Total ...	46	59	64	28	16	17	4	436,400

Source: Adapted from Worrall's Engineering Diary, 1950.

It is not possible to form any detailed estimate of the number of sewing thread plants that is co-existent with the doubling departments of mills, but it is certain that at least twelve mills in Bombay State (including Bombay City) are engaged in the line.

29. *Productivity Team Report, Cotton Yarn Doubling*, p. 1.

The Weaving Equipment in the 'Mill' Sector.—The broad pattern of the weaving equipment of Indian mills, according to the different types of looms utilised in each geographical area is *approximated* below. The information available in Worrall's Engineering Diary is supplemented (especially in the case of automatic looms) by information from other sources, and yet some element of underestimation in the categories other than plain looms is not unlikely. The position relates to the beginning of 1951.

Types of Looms

	Jacquard	Drop-Box	Dobbies	Special	Auto-matic	Plain
Bombay City ...	550	1,000	16,500	300	2,100	43,000
Bombay Presidency (excl. Bombay City) ...	1,030	200	21,300	600	1,000	50,000
Bengal ...	130	...	1,550	100	...	7,120
Uttar Pradesh ...	20	...	725	25	...	11,400
Madhya Pradesh ...	120	...	3,000	35	...	4,220
Madhya Bharat ...	50	...	1,150	200	...	9,300
South India ...	...	...	325	275	4,300	19,000
Deccan (Hyderabad) ...	...	50	900	10	...	1,575
Bihar & Orissa ...	25	...	125	...	...	1,025
Rajasthan ...	...	...	175	...	...	3,525
Punjab* ...	20	...	600	5	520	5,125
Total ...	1,945	1,250	46,350	1,550	7,920	1,55,290

* Punjab includes Delhi.

The approximate character of the figures arrived at above should not be ignored in appreciating the following statement of the chief features of the loom-equipment pattern.

(1) The Indian pattern of loom distribution according to categories has some resemblance to the British pattern of 1939,³⁰ although the Jacquard and specialised looms have only a fraction of their importance in the British industry.

		Proportion of various types of looms in British & Indian industries	
		Britain (1939)	India (1950)
Plain looms ...	...	40%	70%
Jacquard looms ...	...	5%	1% (less than)
Dobby looms ...	...	18%	27%
Automatic looms ...	...	4%	4%
Other looms ...	...	33%	...

(2)³¹ The Indian dobby looms are almost wholly of wider widths, of 42" reed space and above, engaged in the weaving of bordered sarees and dhoties. Chaddars, mulls and voiles are other cloths largely woven on looms of wider reed space but without any such attachment. The proportion of wider looms (42" reed space and above), therefore, easily exceeds 60% of the total loomage, and of it more than one-half is probably of 50" and higher reed space. The next largest group in the Indian weaving sheds is 34"—42" width, with nearly 30 to 35% of the total loomage. The looms below 34" reed space do not exceed 10% of the loomage inside mills. Statistically the estimates appear as follows :—³²

Looms of Reed Space				Proportion	Approximate No. of looms
(1)	Below 34"	...	...	5 to 10%	9,500— 19,500
(2)	34 to 42"	...	...	30 to 35%	58,500— 68,000
(3)	42" and above	...	...	60 to 65%	107,000—127,000
	(a) 42"—50"	...	...	30%	
	(b) 50" and above	...	...	30%	

(3) The widespread installation, supplemented by conversion of older, narrow looms,³³ of wider width looms gathered momentum during the inter-war period, and has had two important consequences. One, production of cloth stated in linear yardage is a growing underestimate of the cloth production during the period, and the yardage per pound of cloth produced also suffers from a similar understatement. The second important consequence that is lost sight of may be illustrated with the relevant data :—

Width of the loom in inches				Speed in picks	Efficiency %
28"	...	...	...	210	80
32"	...	...	...	200	80
36"	...	...	...	200	80
40"	...	...	...	195	80
46"	...	...	...	195	80
68"	...	...	...	160	76
72"	...	...	...	150	76

Source: Report of the Bombay Strike Enquiry Committee, 1928-29, Vol. I, Appendix XVI, p. 260.

31. The bases for the estimates are: (1) Dhoty, saree, mull and voile production as given in the Census data; and (2) information gathered in the course of trips by the writer to mills in various centres.
32. For similar but more accurate data for British mills see *Working Party Report, Cotton*, p. 42.
33. Evidence tendered to the 1932 Tariff Board, by the Millowners' Association, Bombay, Vol. I, p. 31.

The increase in loom width is directly correlated to the decline in the speed of the loom, and to a lesser extent, efficiency is also affected similarly. Thus, a wider width loom weaves cloth (in terms of length) but slowly, and would not in the normal market, be utilised for weaving cloths of widths suited to narrower looms, although in a period of abnormal demand for cloth of smaller widths, the extra profit margins may compensate for the lower production. It should also be clear that the bland statement that two mills have 1,000 looms each may disguise radical differences in the production problems of the units in question and may be no index at all of their productive capacities. That the weaving sheds of Indian mills have, in general, a complete lack of uniformity of loom widths only further complicates the problems of comparison.

(4) The striking share of Bombay State mills in the variegation of equipment, noticeable in earlier comparisons of spinning, and doubling equipment (also in finishing equipment) is even more important in the case of weaving equipment. It is also clear that mills in Bombay City are, in terms of proportions, better equipped than mills in other centres of Bombay State.

(5) Although the data available is not attributable to the same source, and the automatisisation of looms has been hitherto the subject of keen, if not always well-informed controversy, some measure of its progress is feasible and is attempted below :—³⁴

Year	Source of information	No. of automatic looms in India	No. of automatic attachments to ordinary looms
1930	... } International Loom	1,715	13
1933	... } Statistics	4,524	75
1941	... } Textile Recorder, 1941		
	... } Year Book	4,185	...
1951	... } Our figures	7,920	...

About the general, though not sustained tendency of automatic looms to grow in numbers, there can be little doubt. Their adoption, moreover, is no longer limited to one or two concerns as was the case in 1930, for today more than 30 mill companies have installed them,

34. The Tariff Board of 1932, surprisingly enough, failed to record the progress of automatisisation during 1930-33. The figures used by the Board do not hold today. The speed of 159 RPM would for a modern automatic loom be nearer 180; the efficiency percentage would probably be higher by 5 to 15% over its figure of 68.6%, and with superior warping, spooling and sizing the breakage rate would also be lower than the Board's figure of 4 and nearer 1.58 per hour. Moreover, the number of automatic looms per weaver now is normally 8, and upto 16, and not 4 and 5 as was the case in 1932. This is a concrete illustration of the changed technical results which were regarded only twenty years back very differently. (Pp. 65-66 of the Report, comparative data from actual mill data for 1951.)

regionally distributed in the following pattern : Bombay City (14 mills), 2,086 ; Ahmedabad (5 mills), 651 ; Madras and Bangalore (3 mills), 3,689 ; Delhi (2 mills), 519 ; Pondicherry (2 mills), 518 ; and the remaining looms are distributed over the rest of the country. An obviously greater faith in this type of looms is noticeable with some five companies :—

Binny & Co.'s two mills in Madras and Bangalore	3,689	automatic looms
Delhi Cloth Mills (2 mills) ...	519	—do.—
Standard Mills (Bombay) ...	520	—do.—
Hindustan Mills (Bombay) ...	514	—do.—
Ambica Mills (Ahmedabad) ...	403	—do.—
	5,645	automatic looms

The bulk of the automatic looms in the country are of the plain type, and are mainly engaged in the production of shirting, coating, mull and voile fabrics.

The extent to which automatic looms will and can replace ordinary looms depends mainly upon four factors : (1) the proportion of the above types of cloth,³⁵ where the proof of local experience has already supplied the seal of approval ; (2) the extent to which the industry can go on to a more-loom-per-man system with existing ordinary looms will certainly affect the rate of automatisation ;³⁶ (3) the savings in labour requirements would have different financial implications in the various centres of the industry, according to the difference between the respective levels of their weaving wages, and a general movement towards automatisation is likely to make, on the whole, quicker and more substantial progress in the higher wage regions than in areas of lower wage levels ; (4) the newer mills will be in a better position to adopt full-scale automatisation, because otherwise inevitable make-shifts in the preparatory departments would be avoided and there will be fewer vestiges of old labour deployment practices hampering progress. In the light of the considerations mentioned above, it would appear that the general tendency of growth in the automatic loomage will probably continue at a slightly faster pace, but their growth into anything even remotely resembling the American pattern,³⁷ of almost wholly automatic, standardised weaving, is unlikely. The manufacture of such looms, at the initial annual capacity of 600 looms, already undertaken by an

35. The saving in operating costs (i.e. all expenses other than cotton and capital charges) varies with the type of cloth intended to be produced. Thus, according to the data given by the British Working Party (Cotton), the saving amounts to 61.2% in the case of drills, and 8.4% in the weaving of cambrics. *op. cit.*, p. 73.

36. In view of the general practice of giving 6 and 8 looms per weaver in other countries, the scope in this direction would appear to be very considerable. For British data, see Gray E. M., *The Weaver's Wage*.

37. For a description of American weaving practices see *Report of the Productivity Team, Cotton Weaving*, pp. 43-44.

Indian firm in Gwalior,³⁸ will perhaps aid the tendency towards auto-matisation.

The half-way position between full-scale automatic weaving and ordinary weaving, namely, the use of automatic attachments of various types, has been widely explored with very satisfactory results both in Japan³⁹ and the United Kingdom. Their use in India has never been sufficiently widespread, and is probably worth exploring.

This completes our survey of the cotton weaving equipment in the 'mill' sector of the cotton textile industry.

Adequate coverage demands the treatment of two more aspects : non-cotton weaving equipment with the 'mill' sector ; and the cotton weaving equipment of the powerloom sector.

Non-Cotton Weaving Equipment in the 'Mill' Sector.— This may be divided into three categories : (1) blanket weaving ; (2) rayon and silk weaving ; and (3) wool weaving. The first two are the most widespread trends, while the third is localised to a few, well-organised mills.

The information gathered is very incomplete and does nothing else than laying down the minima :—

—				No. of Blanket-making Looms in India	No. of Mills Engaged in Rayon Weaving
Bombay City	...	...		378	4
Ahmedabad	...	...		30	15
Madhya Pradesh	...	...		50	...
Madhya Bharat	...	...		97	...
Uttar Pradesh	...	...		25	...
Other areas	...	...		30	...

Note: Information very inadequate. Based on Millowners' Association, Annual Statement, 1950, and Worrall's Engineering Diary, 1950.

The only other data yielding some approximation of the importance and extent of non-weaving loomage is contained in the official figures of the production of such varieties of cloth. They are submitted below :—

				Production of cotton goods mixed with silk or wool	
1910-11	...	...	...	Nil	
1916-17	...	...	...	43,000 lbs.	
1925-26	...	...	...	708,000 lbs.	
1928-29	...	...	...	3212,000 lbs.	
1938-39	...	...	...	7064,000 lbs.	
1949-50	...	...	...	1596 0'0 lbs.	
1950-51	...	...	...	2664,000 lbs.	

38. *The Times of India*, March 1952.

39. Pearse Arno, *The Cotton Industry of Japan and China*, p. 11.

The Powerloom Sector.—In the case of the 'powerloom' sector the available data enables a more complete picture to be drawn, despite gaps in information. The Fact-Finding Committee⁴⁰ (1941) estimated these at 11,640, of which 6,378 were reported to be engaged in cotton-weaving. 3,300 looms were engaged on artificial silk (i.e. rayon) and silk, while nearly 900 were weaving 'mixtures'.

Of the cotton-weaving looms 5,400 (or, 85%) were in regions which now comprise the Bombay State. Since that date, the progress of the 'powerloom' sector has been staggering, buttressed by the diversion during war years of even non-cotton powerlooms to cotton weaving, as artificial silk yarn became almost unavailable during 1942 to 1946. In 1946, a powerloom census⁴¹ (excluding the State of Kolhapur, which would lower the FFC figure of 5,400 by 1,200) yielded the figure of 14,700 looms. Stray, supporting data relating to other regions displays the same trend of expansion and powerlooms engaged in weaving cotton yarns may be safely placed between 30,000 to 35,000.

There are three very important features of this re-emergence of horizontal tendencies : (1) The average unit engaged in powerloom weaving is very small, though some six units with 300 and more looms exist. Only about 12,000 of the estimated loomage is in factories having 25 or more looms,⁴² in contrast with the result of the Bombay Census (1946) that 14,719 looms were owned by 2,319 owners. (2) The regional dispersion of powerlooms comprises of mill, handloom, as well as other centres. (3) Finally, the general level of technical efficiency is necessarily low, because the supply of technical skill compares, on the whole, very poorly with mills, and the equipment is largely secondhand, having been bought from mills.⁴³ The biggest weaving units having more than 50 looms have a greater proportion of new equipment than the smaller units. And, cases of equipment comparing with the best mills are to be found in every size range.⁴⁴

40. Page 40.

41. *Statistical Atlas of Bombay Province*, p. 70.

42. Official data relating to 1947. The regional distribution of these larger units is: Bombay, 7,100; Bengal, 1,600; South India, 1,600 and the Punjab, 1,100 looms.

43. The tendency to utilize mainly secondhand machinery is equally important with smaller mills. In Ahmedabad, personal inquiries suggest, it is more general than Bombay. The biggest mills may be regarded as complete abstainers from this practice. For a lengthy list of such mills see Evidence before the Tariff Board, 1926, Vol. IV, J. V. Desai's testimony. A mill in Travancore put up 15,500 reconditioned spindles and 100 reconditioned looms, in 1948. (*The Indian Textile Journal*, 1947-48, p. 124.) Significant in this connection was the recommendation of the Post-War Planning (Textiles) Committee in 1945, prohibiting the import and use of such machinery.

44. One of the finest weaving sheds seen by the writer anywhere in India is the Balakrishna Mills (83 looms) of Madura. Neat and well-spaced looms driven by underground motors, with pick counters attached to each loom, with a very low ratio of stopped looms, working in a room with a pleasant colour

Finishing Facilities—Extent and Evolution.—It is against the foregoing, complex background of developments that the addition of non-spinning and non-weaving equipment inside the mill industry has to be appraised. The following details were gathered from entries for each textile unit in Worrall's Engineering Diary, 1950, and have been supplemented in several cases with information obtained from a number of other sources.¹⁵ They relate to the larger cotton textile units of Bombay City and Bombay Presidency, exclusive of the former. Reasonable accuracy is the only claim to precision that can be made.

		Bombay City	Bombay Presidency (excluding Bombay City)
Number of Cotton Textile Units		66	
Nature of Processing Facility		Number of units having the particular equipment	
1. Calendering	...	54	95
2. Bleaching	...	37	95
3. Dyeing	...	43	93
4. Yarn Dyeing	...	29	65
5. Calico Printing	...	10	28
6. Mercerising	...	15	24
7. Schreinerling	...	6	8
8. Others	...	7	4

A few conclusions emerge from the data given above. Firstly, that only the first four processing facilities, namely calendering, bleaching, dyeing and yarn dyeing are the commonest, but yet are not quite universal. Secondly, the remaining facilities, due to one reason or another, are distributed amongst a smaller number of companies.¹⁶ And, finally, although we have no indication of the magnitude of each type of processing facility with each unit, it is clear that spinning and weaving equipment figures are not adequate criteria of size,¹⁷ a point which has been recurrently reinforced throughout this chapter.

The extent to which a small number of units possess a fuller range of processing equipment, as compared to other units, is also surprising.

- scheme and effectively lighted with fluorescent tubes—are presently more an index of the possibilities, than the actualities of the powerloom sector.
45. Figures for other areas although displaying the same tendencies, were not worked out because of the incompleteness of information.
46. It is also clear from the above figures that the importance of this equipment in a very well-equipped, bigger mill can be seen from the distribution of the insurance value of its machinery: Blow Room to Warping, 44%; Drawing-in to Weaving, 27%; Finishing departments, 26%. The figures relate to 1950-51.

Thus, in Bombay Presidency (excluding Bombay City) out of 155 concerns in all, only 82 had calendering, bleaching as well as dyeing facilities. If however, the fourth important line of process diversion were included within the demarcation line, the number of concerns possessing all the four commonest facilities would fall to 55. Analysed from the angle of concerns possessing more than five types of processing facilities, the results are even more impressive. Twenty-nine such concerns (19% of the total), as may be judged from the figures submitted below, not only had more than their proportional share of each facility, but this proportion rises to overwhelming levels when the less common facilities are concerned.

Nature of Processing Facility (1)	Total No. of units with this facility (2)	No. out of 29 concerns, with this facility (3)	Col. 3 as per cent of Col. 2 (4)
Bleaching	95	28	29%
Calendering	95	28	29%
Dyeing	93	28	30%
Yarn Dyeing	65	26	40%
Mercerising	24	13	54%
Calico Printing	28	18	64%
Schreinerling	8	5	63%
Others	4	4	100%

Measurement in time of the development of these tendencies prior to 1926 presents some difficulties, although it is known that the first plants were put up as early as the 1880's. But the only other quantitative indication available is indirect,⁴⁸ and relates to only one centre—Bombay City. And, that is the quantity of water consumed by cotton mills of Bombay, which, apart from the increase in consumption due to the development of humidification is a fair index of the growth of bleaching and dyeing facilities.

Year	Water Consumption by Cotton Mills of Bombay City
1908-09	42.51 million gallons
1918-19	86.10 —do—
1929-30	80.65 —do—
1938-39	227.90 —do—
1948-49	313.87 —do—

Source: Various Annual Reports of the Municipality of Bombay.

48. One is the tonnage of bleaching and dyeing machinery

1 dyeing facilities has always been made within the country; moreover, can hardly reflect the extent to which manual bleaching and dyeing were

H. P. Mather, upto 1930 only half a dozen mercerising to be found inside India's mills; by 1950, 20 more had been added, and during 1945-50, another 30 ranges of the latest type were installed

The later growth of calico printing facilities and other processing facilities like mercerising are, however obvious in the value figures of our import trade statistics,⁴⁹ as well as the quantitative data supplied in British Statistics of exports of machinery to India which are good indication of the physical magnitudes involved, Britain being the chief supplier of textile machinery to India.

Period	Imports of printing and finishing machinery from the U.K. into India		Value of Indian imports of printing machinery only (lakh Rupees)	
	Total for the period (tons)	Annual Average	Total for the period	Annual Average
1926-30 ...	2,401	480	1.05	0.21
1931-39* ...	10,350	1,039	18.99	2.11
1940-44 ...	3,163	632	17.44	3.49
1945-51 ...	not available	not available	71.00	11.80

Sources: Adapted from the United Kingdom's Trade Statistics, Vol. III, and The Seaborne Trade of India, Vol. I, for the different years.

* The U.K. Trade figures for 1931-37 have been adjusted for the above result, which would appear, therefore, to be an under-estimate.

Finally, it may not be out of place to arrive at approximations of the bleaching, dyeing and printing capacities existent in the 'mill' sector of the cotton textile industry, with the aid of data contained in the Censuses of Manufactures, adding a necessarily arbitrary figure for excess capacity, which has been known to exist, and after making adjustments for the gaps in the Census coverage. Our estimates are submitted below :

Cloth Bleaching Capacity	... 2,000 m.yds a year.
Cloth Dyeing Capacity	... 1,000 m.yds a year.
Calico Printing Capacity	... 400 m.yds a year.

The capacity of the processing industry which is not a part of the mill industry is not likely to be less than one-half of the printing capacity and its cloth bleaching and dyeing capacity is probably between one-half to two-thirds of the capacity in the 'mill' sector.⁵⁰ And the more

or being installed. It is suggested that a larger measure of concentration of this facility obtains in Bombay State. See the *Indian Textile Journal*, April 1951, p. 461.

49. Indian import statistics do not supply the quantitative data at all; and a category-wise break-up in monetary terms is available only from 1923-24 onwards.

These figures may appear overestimates, but are probably more guilty of under-statement. The following figures should serve as some proof: In 1948, 145 dyeing and bleaching factories in Bombay State employed no less than 12,700 workers; while another group of miscellaneous textile factories employed another 14,800 workers. These exclude the processing capacity available with silk mills, capable of being utilised and being utilised to the purpose of processing cotton fabrics. (Figures from the Statistical Atlas of Bombay Province, p. 71.)

manual trade probably is capable of dealing with a similar quantity of bleached and dyed goods as the non-mill processing industry and can block, and screen-print anywhere from 100 to 200 million yards of cloth a year.

Pooling together all the estimates for the entire cotton textile industry, we arrive at the following :

Cloth bleaching capacity	4,000—4,850 m. yards a year.
Cloth dyeing capacity	2,000—2,450 m. yards a year.
Cloth printing capacity	700— 800 m. yards a year.

This closes our survey of the finishing equipment of the cotton textile industry in India.

Variegation of Equipment—Other Aspects.—The variegation of equipment, in its major manifestations—the growth of composite mills, the adoption of non-cotton weaving equipment, and the growth of finishing or processing departments—has already been dealt with. But the operation of these trends is not limited to these sectors.

Nearly 40 mills in India have waste spinning plants, spinning on 32,000 spindles. About half a dozen mosquito netting plants, two or three garment-making plants, 300 to 400 hosiery knitting machines and 25 warp knitting looms, 20 well-equipped foundries and engineering workshops manufacturing a variety of articles for sale outside, considerable machinery for the manufacture of bandings, tapes and niwars, 100 looms for manufacturing belting and hose fabrics, 12 embroidery and lace machines, 3 or 4 chemical plants attached to mills, 3 tyre-cord fabric plants, with 70,000 spindles, 3 cotton heald-making plants, about 60 ginning and pressing factories and 4 bobbin-manufacturing plants,—these comprise the known range of equipment variegation in 1951.^{51 52}

The variegation process in its initial stages is intimately linked up with the high profit-making capacity of the cotton mill to which it is attached, but extensive personal investigations have failed to disclose that a particular size of the cotton mill, or a particular level or amount of its profits is necessary before such tendencies come into play. Indeed, several of the biggest mill companies have preferred manifold addition to 'cotton' equipment, and steadfastly refused even the installation of bigger repair shops. While some of the smallest mill companies are

51. The most outstanding example of these tendencies is the Delhi Cloth & General Mills Co. Ltd. Starting as a small spinning unit in the 1880's it today comprises 5 cotton mills, with full-fledged finishing departments, 2 sugar mills, a power alcohol plant, a confectionery plant, a vegetable ghee plant, a tent factory, a fully automatic garment-making plant, and agricultural land.

52. At least one mill company, namely, the Seksaria Cotton Mills Co. Ltd., Bombay, is known to manufacture for sale hosiery latch needles.

known to have branched off into a variety of other manufacturing activities, especially during the war years.

In terms of temporal evolution, the period from 1930 to 1951, may safely be regarded as the most important in the working out of these trends, the later years being more significant than the earlier years. No judgment as to the extent of technical success and progress achieved in these other sectors is feasible. Financial implications are equally submerged in the generality of respective company accounts and do not afford any scope for specific assessment. The employment opportunities created in these sections are also not precisely separable, but on the basis of scattered data gathered by the writer, it is surmised that between 15,000 to 30,000, or about 2 to 4% of the labour force is so employed presently.

D. CAPITAL INTENSIFICATION : PRESENT TRENDS

The general tendencies towards capital intensification in the cotton mill industry, over the entire period of its existence, in the spinning, weaving, and finishing departments made themselves partly clear in the earlier sections of this chapter. Short-cut processing, higher drafts, and tape drives in the spinning department ; the introduction of superior varieties of ordinary looms, and the automatisation of looms in the weaving department ; and the almost complete substitution by machinery of manual methods of bleaching and dyeing in the finishing or processing departments are all innovations of this character. Their financial implications have varied with technological progress, on the one hand, and relative prices, on the other ; superior types of labour deployment have evolved, and their effect on the ratio of labour to capital equipment has also been of a capital intensifying character, although trends in wage costs have dominated the financial implications of each process, sometimes and in some centres retarding the change, and at other times providing the most direct incentive to such a change. Moreover, in a non-homogenous⁵³ industry like cotton textiles, there is no single range of mechanical patterns that can enable precise quantitative pictures to be drawn, and even if such could be drawn, in their very nature they would soon become obsolete. The danger is obviously greater in the evaluation of the Indian industry which has multiplied in the course of a century of growth, altered its production patterns beyond recognition, achieved rapid technological progress, and as is elaborated elsewhere in this book, materially altered the older organisational and financial structures.

The acceleration of the trends towards capital intensification, quite clear since the 1920's, has assumed a faster pace after 1945. Further-

53. See Rostas L., *Productivity, Prices & Distribution in Selected British Industries*, p. 21. Dr. Rostas classifies the product structures of cotton spinning and doubling industries in these terms.

more, in the past alterations were largely confined to changes that as far as possible did not impinge upon the rest of the equipment or the manner of its working in a given unit. Thus, to take a more extreme case, the change from manual to mechanical bleaching or dyeing did not materially affect the rest of the equipment structure. But changes like short-cut processing, super-speed warping and spooling on the Barber-Colman system,⁵¹ automatising of looms, or, the latest types of slasher sizing, are not capable of piecemeal, isolated adoption. They involve, among other things (according to technical requirements, current mill practice and the sanction of industrial arbitral tribunals), a much better-paid, though smaller labour force, slowing down of machinery speeds, superior raw materials, more careful and specialised maintenance, greater specialisation of jobs, and superior technicians. An important consequence, detailed in the later chapter on financial aspects, is that by raising the proportion of overhead to current costs, the tasks of management, already made complex by the growth in the scale and types of equipment, have tended to devolve into a more delicate financial balance than has been the case until very recently.

F. SUMMING UP

Such are the contours of the equipment patterns in the cotton textile industry of India. They reflect the growth of the early mill industry of small units into one with larger units, extended processes of production, diversification of production within as well as beyond the range of textile products. The trends also reveal the increasing compass of management functions, and point to the necessity of harnessing superior skills of entrepreneurship and management to the same tasks. Also crystallized is the re-emergence of horizontal tendencies in the physical structure of the industry, signifying at once the creation of a competitor for the weaving industry, and a customer for the products of the spinning section.

As between mills, and sometimes as between regions, widespread progress in the adoption of new lines of equipment, is reflective of increasing internal competition.

The financial implications of these various trends are not always foreseeable but their general upward influence on the proportion of over-

51. The Barber-Colman system of warping and spooling is of American origin and is a remarkable ad-

ing, reduces the stock of 'process' men between spinning, the number of men required to a tenth of those previously employed. It is very perceptibly. But its high capital cost, and the lack of output, make it unsuitable for the smaller mills. Lack of counts inside our mills, and the lower twist factor normally affect its technical efficiency. In June 1952, six of the largest Indian Mills, in Bombay, Cawnpore, and Delhi, had already installed it.

head, fixed costs must result in making financial management more complex, and less stable.

In fine, the evolution of equipment patterns has not been an isolated development. It has influenced, and has been modified, in its turn, by the competitive struggle ; it has taxed the organisational capacities available in the industry, and, not unlikely, will further add to the strain in the future ; and partly, at any rate, the patterns of the growth of the technical and managerial cadres have been influenced by it.

CHAPTER II

THE WAGE SITUATION

The problems of labour have changed, both in their nature and in their emphasis during the evolution of the cotton mill industry in India.

In the initial phase of the cotton textile industry the growth pattern was attuned to that of a developing industry, gradually acquiring a greater share of an already existing much higher demand. The labour force was enabled to grow at a high rate and newer avenues of employment were rising throughout the country. This labour force was drawn, raw and crude, from definite, almost exclusive social classes and regions, although the tendency was of differing importance in the various centres. These tendencies have not lost all of their previous rigour, although a material modification in the shape of a wider pattern of class dispersion of origins is discerned. The levels of wage remuneration offered to these new classes of the Indian industrial society were not too tempting, that is, did not imply a drastic deviation from the general wage structure in the regions where industries were coming into existence. From the point of view of the mill industry, they had the advantage of being stable and continuous over a long period of time. The industry chronically faced problems of labour shortage,¹ despite a very high proportion of the jobs being of an unskilled character and requiring the minding of relatively simple types of machinery. But the long unregulated hours of work, the high disease and mortality rates of the bigger Indian towns of the nineteenth century, and the vastly different modes of urban living were factors continually retarding the industrial intake of new workers. The simultaneous urbanisation and the growth of other tertiary occupations became competitive to the industry in the matter of labour supply. In other words, the problems of labour were mainly the problems of availability, tackled primarily unitwise, leading to a confused pattern of differentiation in wage rates in almost every centre of the industry. As early as 1891 the advantages of standardization were perceived,² but no substantive action was taken until after another four decades. Another feature of the situation was the willingness to abdicate managerial functions relating to the recruitment of labour in favour of the class of jobbers, with which we deal at some length in the next chapter.

From this position the industry has moved away. Labour shortage is already a matter of history, and increasing responsibility in regard to

1. *Report of the Royal Commission on Labour*, p. 21.

2. *Report of the Bombay Strike Enquiry Committee*, 1928-29, Vol. I, p. 86. The first scheme was prepared by Mr. N. N. Wadia.

all problems of recruitment and laying off is being assumed by the managerial elements. It may not, of course, be disputed that legislative enactments have been significantly responsible for this new assumption of functions. The industry today employs a labour force that is volatile and not always well disciplined. But it matches greater efficiency against keen, perhaps too keen consciousness of its own rights. The job structure of the industry has altered both in character and in the range of component occupations. New departments have been added, older methods of work have undergone drastic transformation or elimination with the net results of a considerably larger proportion of skilled workers in the labour force, and a tremendous increase in the number of occupations covered by the industry. The expansion of the industry tends to add to employment, but the trends towards capital intensification traced in the chapter dealing with Equipment Patterns tend to reduce labour requirements per unit of physical output.

The level of wages has tended to move very rapidly away from the general regional level of wages. Moreover, the wage patterns have become so changeable in the last fourteen years that certainty and stability in calculations of wage costs are non-existent. The Government and its entire arbitration machinery now interpose, in roles varying from observer to final arbiter, between the industry and its employees. The hours of work have been reduced by nearly 40% during the last fifty years. Mechanisation, notwithstanding regional and unitwise differences, is taking place now at a pace that is faster than it has been hitherto, creating the necessity for newer management approaches to patterns of labour deployment and employment. In wide sectors of the industry the trade unions have succeeded in becoming an additive influence to the wage levels, irrespective of other considerations. Throughout the industry the trade union movement has also contributed to creating an attitude of defiance of management in the workers and succeeded in sponsoring, by a variety of means, disruptionist tendencies in employer-employee relationships. As a reaction to these forces, the utility and necessity of adopting an industry-wise approach in certain basic aspects of the employer's labour policy have become more acceptable. Finally, labour has now become a claimant, recognised by the judicial tribunals of the country, to the surplus arising out of the operation of the industry in a given year.

Against this background of change in the nature and types of labour problems facing the industry, the developments in the wage situation are reviewed in the rest of this chapter.

A. THE WAGE SITUATION : THE EVOLUTION OF LEVELS

Early Stability and Slow Rise in Wages.—There is general agreement that the wage levels upto 1914 were remarkably stable.³ The facts in relation to Bombay City are presented below :—

Scale of Monthly Wages in Bombay Mills : 1875 and 1905

	1875	1905
	Rs.	Rs.
Blow Room Hands	8 to 9	10 to 12
Grinders	11 to 12	13 to 14
Strippers	10 to 11	12 to 13
Can Boys	5 to 6	7 to 9
Fly-men	7 to 8	10 to 11
Drawing Tenters	9 to 10	11 to 13
Slubbing and Inter Tenters	12 to 13	13 to 17
Reving Tenters	13 to 14	14 to 18
Mule Spinners	18 to 22	25 to 28
Mule Piecers (1st and 2nd)	10 to 13	13 to 16
Throstle Piecers	7 to 8	11 to 12
Doffer Boys	5 to 6	7 to 8
Reelers and Winders	6 to 8	8 to 12
Warpers	12 to 16	16 to 22
Sizers, Front	20 to 35	30 to 50
Sizers, Back	12 to 14	14 to 18
Measurers	10 to 15	15 to 20
Mechanics	15 to 50	15 to 50
Engine Drivers	30 to 40	40 to 70
Firemen	12 to 14	14 to 18
Nowghanies	12 to 14	14 to 18
Coolies	7 to 8	8 to 10

Source: Rutnagur, S. M., *Bombay Industries: The*

In view of the general complaint of labour shortage made by Indian industry and noted as late as 1930 by the Royal Commission on Labour,⁴ it is remarkable that this position should have been maintained. The slow, gradual rise of wage levels characteristic of this phase of Indian industrial evolution is in sharp contrast to the situation facing the Japanese cotton textile employer.⁵

Rural and Industrial Wage Relationships.—It would appear that this early phase of wage stability was co-incident with a period wherein

3. Kuczynski J., *A Short History of Labour Conditions under Industrial Capitalism*, Vol. I, Part II, 1945, pp. 46 *et seq.* Dr. Kuczynski's conclusions are not quoted here as an objective statement of facts, for the statistical approach adopted by him involves an averaging out of wage movements in new as well as old centres, irrespective of the fact that the former were not in existence in the earlier period. Thus his index of cotton mill wages rises from 73 in 1880 (1900=100) to 134 in 1914. More objective investigations by the Prices Enquiry Committee and by Dr. Buchanan in his "Development of Capitalistic Enterprise in India" (pp. 329 to 333) also reveal the same phase of stable slow growth. According to Dr. Buchanan in 1860 the index of wages stood at 62, and in 1914 at 100.

4. Page 21.

5. Arno S. Pearse, *International Cotton Bulletin*, 1934-35.

rural and industrial wage levels were in greater consonance with each other than was the case during the inter-war period.⁶

Probably the close identity of rural and industrial wage levels, reinforced further by the obvious advantages of lower living costs in rural areas, the absence of the need for house rent payments therein, and the advantages of continuing to exist in accustomed, social settings, accounts for the shortage of labour continuously felt by Indian industry. The lower health standards and the greater incidence of mortality from various diseases in the towns must have exercised an additional restraining influence on the desirability of recruitment to the industrial working class,⁷ from the point of view of the worker.

Characteristics of Early Wage Patterns.—Also tending to peg wages at a lower level is the larger proportion of unskilled jobs in the cotton mill industry in the earlier phase than is the case presently. The Industrial Census of 1911 classified no less than 43 per cent of the workers employed as unskilled.

The following figures relating to 1937 indicate the proportional importance of unskilled occupations of coolie and sweeper in Bombay Presidency, Bombay City and Ahmedabad.

				Number of coolies	No. of sweepers
Bombay City	...	...	...	4,771	1,731
Ahmedabad	...	...	...	2,363	867
Bombay Presidency	...	...	...	8,882	3,221

While it is not possible to lay down a clear-cut period-distribution recording the compositional movement of the job structure, it is obvious

6. Munshi M. C., *Comparative Wage Levels*, pp. 15-16 and 27.
7. The figures given below, collected from the Reports of the Municipal Commissioner for the City of Bombay, indicate that the proportion of working class deaths from the respiratory diseases was significantly higher than the toll of the latter for the population as a whole, until very recently.

	Deaths from Respiratory Diseases		Total No. of Deaths	
	Cotton Mill Workers	Population	Cotton Mill Workers	Population
1924-25	81	15,838	142	38,800
1934-35	185	11,672	360	27,370
1938-39	146	14,378	323	35,600

Since most cotton mill workers are likely to return in an emergency to their villages the incidence of deaths from respiratory diseases is bound to be even greater than what is suggested by the above data.

that it now comprises a substantially higher proportion of skilled workers, than was the case in 1911.

On the basis of more refined skill and responsibility differentials it is nevertheless unlikely that more than 40% of the occupations in the cotton mill industry could be presently classified in the category of skilled workers.

The problems of wage determination in the industry were at no stage determined in terms of a collective industry-wide approach, although N. N. Wadia mooted a scheme for the standardisation of wages in Bombay in 1891.⁸ In the wake of the First World War, the mill-owners of Bombay and Ahmedabad took the first joint action in this regard, by granting uniform rates of dearness allowance expressed in terms of percentages of the wage on a given date.⁹ From that time onwards, the collective approach to wage problems gained in importance and came to co-exist with the earlier unit-wise determination of wage policy. In Ahmedabad there was an interesting experiment, although in limited sectors, between the Textile Labour Association and the millowners to bring about the standardisation of wage rates.¹⁰ But by and large the wage pattern was determined until 1934 by the individual employer in relation to the various factors affecting his own mill ; or, the wage pattern was essentially the result of the various influences that might have been effective at different times in the course of the mill company's existence. The resulting wage pattern showed extensive intra-centre variation in wage rates, and also suffered from many anomalies.¹¹

The continued absence of legislative action enabled the strengthening and perpetuation of the piece-meal construction of the wage structure. Moreover, since the industry's shift towards production of higher counts of yarn mainly took place on the basis of conversion of sections of older mills and not of specialisation, the fine spinning section is staffed, more or less closely, on the older patterns of labour deployment and remuneration. The most significant result of this has been the failure of the industry to make an adequate increase in the complement of the

8. *Report of the Fawcett Enquiry Committee, 1928-29, Vol. I, p. 86.*

9. *Report of an Enquiry into Wages and Hours of Labour in the Industry, 1926*, prepared by the Labour Office, Government of Bombay, gives (pp. 167 to 169) a detailed history. See also *Report of the Textile Labour Enquiry Committee, Vol. II, Final Report, 1940*, pp. 99 to 102.

See *History of Wage Adjustments in the Ahmedabad Industry, Vol. II*, issued by the Textile Labour Association, Ahmedabad. Sir G. D. Madgaonkar, Umpire in an industrial dispute affecting Ahmedabad, put this interpretation upon an agreement arrived at in 1934 between the Textile Labour Association and the Millowners. (Pp. 12 to 30.)

11. The Tariff Board of 1926 pointed out that the difference between the earnings of the weavers and siders was greater than appeared reasonable. This was a result, although not as objectionable as the Tariff Board felt, of the inducement of higher rates offered to the weavers, in the early stages, theirs being a more skilled job than the sider's. An indication of the complexity of the

machinery to be looked after by workers employed¹² on the spinning of finer yarns.

Workers in the fine spinning section do not have a reasonable workload in comparison with similar occupational designations in the coarser yarn section.

Presently, without substantially affecting the anomalies that grew up with the old wage structure, a judicially recognised superstructure of standardised wage rates has been built by raising wage levels all round.

Wage movements in the industry have not unnaturally had different directions and levels. In the past, wage rates in different centres displayed very substantial differences, which have not altogether disappeared even today. Thus, in 1914, the average earning per worker in the mofussil centres of the Bombay Presidency excluding Bombay, Ahmedabad and Sholapur was Rs. 11-14-1; in Bombay City it was Rs. 16-6-3; in Ahmedabad, Rs. 13-9-9; and in Sholapur, Rs. 10-9-4. These wide margins persisted until 1939 and have resulted in internal competition between mills based on lower labour costs rather than on considerations of technical efficiency.

That these tendencies do still operate can be seen from the following figures relating to 1944. The more recent position is discussed in another context elsewhere in this chapter.

wage pattern, going to almost irrational and absurd levels, may be had from the following statement of how an Ahmedabad mill calculated the wages of a piecer or a sider in 1939:

Wages of a piecer working one-side on a machine with 380 spindles

	Rs.	12	12	0	Amount fixed by the Award of 1920.
1. Plus	Rs.	1	10	0	Dearness allowance since 1921.
2. Plus	Rs.	1	0	0	Attendance Bonus.
	Rs.	15	6	0	
3. Minus		15	%		Cut per Agreement in 1923.
4. Plus		8	%		Increase as per Award in 1930.
5. Minus		6½	%		Cut as per Delhi Agreement.
6. Plus	Rs.	0	2	0	Per Rupee, interim increase granted by the Textile Labour Inquiry Committee, Bombay, in February 1937.

Source: Adapted from the Report of the Millowners' Association, Ahmedabad, 1917, p. 24.

12. In American mills the following pattern of labour deployment on different counts of yarn is to be found:—

*Number of men required per
1,000 spindles*

118	3.2
228	2.03
318	2.7
458	1.11
788	1.4

Source: Data adapted from Productivity Team Report—Cotton Spinning, p. 104 *et seq.*

Centre	Monthly Wages				
	Doffers	Ring Siders	Reelers	Grey Winders	Two Loom Weavers
	Rs.	Rs.	Rs.	Rs.	Rs.
Bombay	51	57	53	53	75
Ahmedabad	...	...	...	...	...
Sholapur	37	39	30	31	61
Poona	53	51	38	43	58
Barsi	21	26	21	20	43
Surat	56	65	57	81	56
Gadag	17	22	15	17	26
Gokak	9	14	16	14	...

Daily Wages															
	Rs.	a.	p.	Rs.	a.	p.	Rs.	a.	p.	Rs.	a.	p.	Rs.	a.	p.
Coimbatore	0	8	6	...	...	...	0	11	0	0	12	0	1	10	0
Madras	1	7	11	1	9	11	2	2	4	2	0	3	2	5	2
Madura	1	6	6	1	8	6	1	5	6	1	6	7	1	8	7
Kanpur	1	12	4	1	13	6	1	10	0	1	12	0	2	6	0
Bengal	2	8	9	1	4	11	1	2	0	1	1	9	2	4	9
Delhi	1	13	5	2	5	6	...	...	...	1	15	2	2	13	5
Akola	1	7	8	1	13	11	1	6	2	...	...	...	2	6	9
Nagpur }	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Indore	1	14	7	2	2	0	1	14	9	1	15	0	2	12	2
Baroda	2	6	5	...	...	...	2	6	0	2	7	6	3	5	7
Bangalore	0	12	11	1	13	1	1	1	0	1	1	0	1	11	3
Cochin	0	3	9	0	12	4	0	7	7	0	7	5	1	5	3

The variation in wage rates is great, and is further summarised below :—

Wage Variations (Daily Basis)

	Minimum	Maximum
	Rs. a. p.	Rs. a. p.
Doffers	0 3 9	2 2 6
Ring Siders	0 12 4	2 8 0
Reelers	0 7 7	2 3 6
Grey Winders	0 7 5	3 1 8
Two Loom Weavers	1 5 3	2 8 6

These extremes of variations have materially affected the centre-wise locational shifts traced earlier. They have created within the country a competitive pattern which has low labour cost as the mainstay. The shift of the production of coarser counts of yarn to low-wage regions is the most important of these effects. It is how-

ever to be appreciated that these broad tendencies were not coincident, speaking generally, with a movement towards significantly superior levels of labour deployment in these areas. Thus, in Coimbatore no less than 7,831 siders were employed in 1944 to mind 400,000 spindles, an average of approximately 50 spindles per sider. There were co-existent siders looking after only one-half of a side, three-quarters of a side, as well as single and double siders. In the data submitted below is contrasted the labour deployment of siders in Bombay in 1937, against the position of Coimbatore in 1944.

			Coimbatore	Bombay
$\frac{1}{2}$ Siders	...	...	2,690	...
$\frac{3}{4}$ Siders	...	...	51	...
Single Siders	...	...	1,560	4,536
Double Siders	...	...	3,521	4,616
Treble Siders	...	...	...	28

Two trends emerge from the above table. (1) There is very great difference in the levels of labour deployment between the two centres and (2) there is also a tendency in the lower wage centre to adjust itself to a significantly lower, general level of labour deployment.¹³

B. PRESENT WAGE SITUATION

Basic Wage Structure.—After 1944, and more particularly in 1947 and 1948, legislative action in wage matters made itself felt on the basic wage pattern as distinguished from the temporary wartime grants of dearness allowance. By the end of 1948, well over 80% of the mills in India had their wage patterns standardised as a result of the awards made by various industrial tribunals. The tribunals sought to fix the minimum wages for the lowest paid and the most unskilled job, usually that of a sweeper or a coolie. The wage rates above the minimum were fixed, largely taking into account the older wage differentials between occupations. Almost never did the tribunals seek to alter the wage pattern by lowering the existing wage structure. In other words, standardisation of wage rates has kept intact almost all of the previous occupational differentiations but in the process of raising the lowest paid categories of workers to higher wage levels a tremendous, permanent upward influence has been exerted on the entire wage structure.

In the statement given below are brought together the minimum basic wages fixed for cotton mills in different centres. It is apparent

13. Cawnpore would appear to be the only major exception to the above trend. During 1929 to 1939 they enforced not merely wage cuts but continued to drastically rationalise. The Report of the Cawnpore Labour Enquiry Committee supplies the details by occupations in its appendices.

that wage differences between centres still persist, although their magnitude is lower. Thus, minimum wages now vary from Rs. 16 per month in Cochin to Rs. 30 per month in Bombay City—a difference of less than 100% as against the older difference (see the preceding table) ranging upto about 800%.

Basic Minimum Wages Fixed for the Least Skilled Worker in Important Cotton Mill Centres

Centre	Number of Mills		Date of Enforcement	Basic Minimum Wage			Dearness allowance (Jan. 1952)
				Rs.	a.	p.	Rs. a. p.
Gaya	...	All (1)	September 1948	23	0	0 per month	
Bombay City	...	All (63)	January 1947	30	0	0	58 2 0
Ahmedabad	...	All (66)	July 1947	28	0	6 " "	71 2 3
Sholapur	...	All (5)	End of 1948	26	0	0 " "	59 5 0
Barsi	...	All (3)	May 1948	21	8	6 " "	
Gadag	...	All (1)	January 1948	21	0	0 " "	
Madhya Pradesh	...	All (11)	January 1948	26	0	0 " "	43 9 8
Madras	...	All (71)	August 1948	20	0	0 " "	44 7 0
West Bengal*	...	All (16)	August 1948	20	2	5 " "	30 0 0
Indore	...	All (8)	August 1947	26	0	0 " "	51 9 0
Cochin	...	(1)	September 1948	0	9	9 per day	
Baroda	...	All (4)		26	0	0 per month	64 0 5

* For women workers the wage is Rs. 15-1-9, 75% of the basic minimum wage for men.

Sources: (1) Industrial Awards in India, An Analysis, pp. 155-56.

(2) Official statistics relating to the number of mills.

(3) Indian Labour Gazette, Feb. 1952, p. 696.

In Saurashtra the basic minimum wage is laid down at Rs. 24 for a month of 26 working days.

Beyond this minimum, basic rates are to be determined at two different rates, one higher and the other lower, for workers in two groups of mills, based on certain centre-compositions, determined by the Saurashtra Labour Investigation Committee. Dearness Allowance rates are laid down at different levels for three groups of mills as percentage of the rates of dearness allowance obtaining in Ahmedabad. Thus,

80%	...	Group A: Mills in Rajkot & Bhavnagar.
70%	...	Group B: Mills in Wankaner & Porbander.
60%	...	Group C: Mills in Surendranagar, Morvi, Mahuva, Jammagar and the rest.

The magnitude of the change effected by the new awards in terms of labour cost has not been appreciated adequately because of the seller's market in which they came into operation.¹¹

11. Even in a centre like Ahmedabad the persistence of wage differences was obviously an important factor in determining the profitability of various mill companies. As Sir G. D. Madgaonkar pointed out in 1937, some of the most prominent, progressive, and up-to-date mills did not belong to the Millowners' Association and were therefore not bound by any agreement between the Textile Labour Association and the Millowners' Association. In some cases, the older mills belonging to some of the managing agents were members of the Millowners' Association but the newer mills were scrupulously kept out of the Association (p. 6). The Textile Labour Association supplies the follow-

Dearness Allowance.—The higher basic wage is only the first step in appreciating the labour costs. Dearness allowance schemes have been worked out in a variety of ways.¹⁵ Invariably they started as a small sum of money which was a provisional arrangement that could not and did not materially affect the basic wage pattern. It was probably thought that they were provisions made during the period of war (1939-45) emergency and to be cancelled as such, no sooner the emergency was over. Given as flat amounts to every worker irrespective of the quantum of his basic wage or his occupational status, these sums are for most mills significantly larger than the basic wage bill for categories of workers other than weavers, warpers, drawer-ins, and the like. As Dr. Zachariah¹⁶ suggests, this level of the dearness allowance has a lowering effect on the differentials between occupations. In Bombay, in 1939, the wage of a 2-loom weaver was nearly Re. 1-6-0 and the corresponding wage for a coolie was between annas 11 and annas 12. Presently, the coolie or the sweeper gets Rs. 30 as basic wage and Rs. 55 as dearness allowance making a total of Rs. 85. A weaver today would make between Rs. 42 and 50 as basic wage and earn an identical amount by way of dearness allowance. This means that a weaver's total wage today is only about 20% higher than that of a coolie or a sweeper, in contradistinction to a difference of 80 to 100% in 1939.

The chart opposite illustrates the diverse growth in the quantum of dearness allowance in Bombay City and Ahmedabad, and makes two more propositions obvious.

(1) The level of dearness allowance in Ahmedabad has persistently exceeded the dearness allowance in Bombay although the difference between the two has been narrowing of late. This is in contrast to the provisions in the basic standardised wage structure of the two centres which lay down that the minimum Bombay wage (Rs. 30) should be higher by 7% as compared to Ahmedabad (Rs. 28).

ing figures, which point to the material difference which lower wage cost must make to the final profits position:

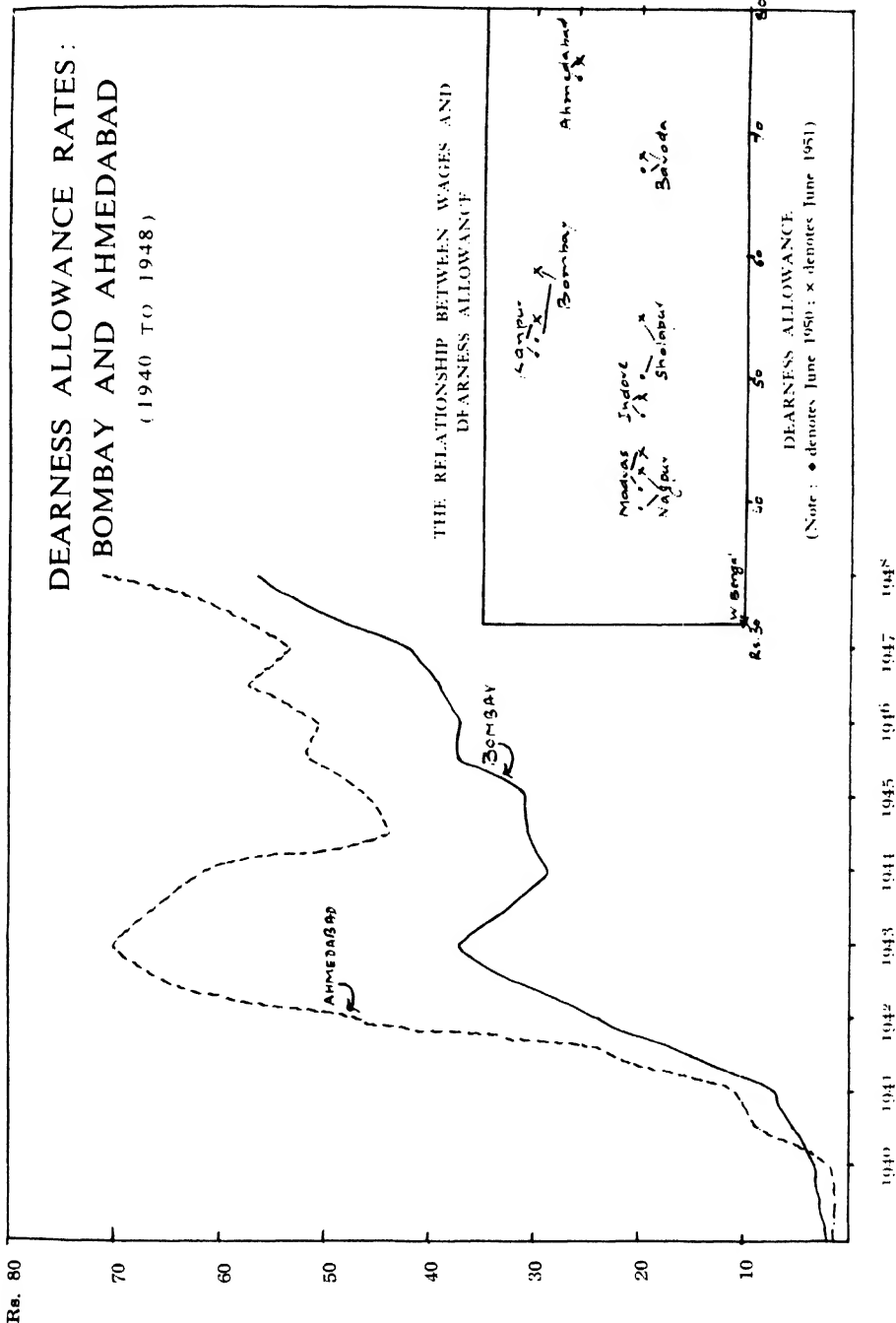
Ahmedabad mills divided according to wage levels being

No. of Mills	Higher	Average	Lower	
44	20	12	12	Mills above a stated profit level. Mills below a stated profit level.
20	2	6	12	
64	22	18	24	

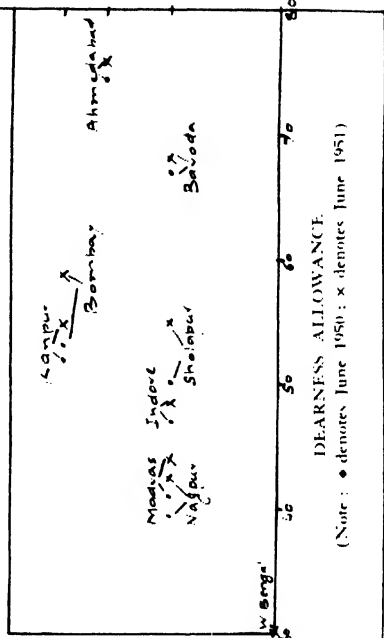
See *History of Wage Adjustments in Ahmedabad Textile Industry*, 1936-37, Vol. IV, p. 141.

15. See *Industrial Awards in India*, p. 31.

16. *Industrial Relations*—Ph.D. Thesis registered with the Bombay University in 1950, pp. 23-24.



THE RELATIONSHIP BETWEEN WAGES AND
DEARNESS ALLOWANCE



DEARNESS ALLOWANCE
(Note : ◆ denotes June 1950 ; × denotes June 1951)

Rs.
30
28
26
Minimum Basic Wage

Incidentally, this is also one of the best examples of trade unions acting as an additive influence on the wage level, since the Textile Labour Association of Ahmedabad is mainly instrumental in getting to Ahmedabad workers of the lowest category 100% neutralization of the increase in the cost of living as against 76% upto 1947 and 90% neutralization after the date ¹⁷ in Bombay.

(2) The 'insert' crystallises the inconsistency of the relationship between the basic wage and dearness allowance in different centres and over a period of time. The dearness allowance, consequently, continuously goes on altering the relative labour cost position of the various centres.

By way of an additional illustration is submitted below a table which compares the dearness allowance rates in Bombay and Sholapur during 1949-50 :—

An Illustration of the Conflicting Trends in Wages (Dearness Allowance)

Month				Bombay	Sholapur	Difference
1949				Rs.	Rs.	
August	...	...	...	51	54	-3
September	...	...	...	52	53	-1
October	...	...	...	52	54	-2
November	...	...	...	52	54	+2
December	...	...	...	55	53	+2
1950						
January	...	...	...	52	53	-1
February	...	...	...	53	53	Nil
March	...	...	...	51	53	-2
April	...	...	...	51	54	-3
May	...	...	...	52	51	+1
June	...	...	...	53	50	+3
July	...	...	...	53	51	+2
August	...	...	...	57	51	+6

During the short period of one year the dearness allowance in Bombay has increased by 12% whereas the dearness allowance in Sholapur has declined by 5%.

Bonus Payments.—The basic wage and the dearness allowance together form the bulk of the labour cost. To these must now be added the more or less regular payment of an annual bonus by all mills in

17. The additive influence of the Textile Labour Association is also felt in centres other than Ahmedabad. In 1949, e.g. the wage of a cotton mill worker in Surat was Rs. 1,316, which is higher than the Bombay wage of Rs. 1,280. Figures from the *Bulletin of Bureau of Economics and Statistics*, Government of Bombay, July 1951.

most centres. Tremendous variation in the quantum and in the methods of calculating and arriving at the quantum of the bonus is also the characteristic in this case which was sought to be avoided by the region-cum-industry approach. Moreover, the possibility that in more normal times the number of losing concerns may not be as small as it has been in recent¹⁸ years makes the principle of excepting losing concerns capable of creating in such times a grave situation of employee discontent. The possibility is not merely academic but almost a fundamental situation in the cotton mill industry in normal times.

Secondly, the enforcement of payment of bonus by a company which makes a profit of say Rupee one, and the avoidance of the need for making such payment in the event of a loss of Rupee one may be a sound legal distinction between profit and loss. But its economic justification is questionable. The difference between a small loss and a small profit can be fairly regarded only as one of degree and not of kind.¹⁹

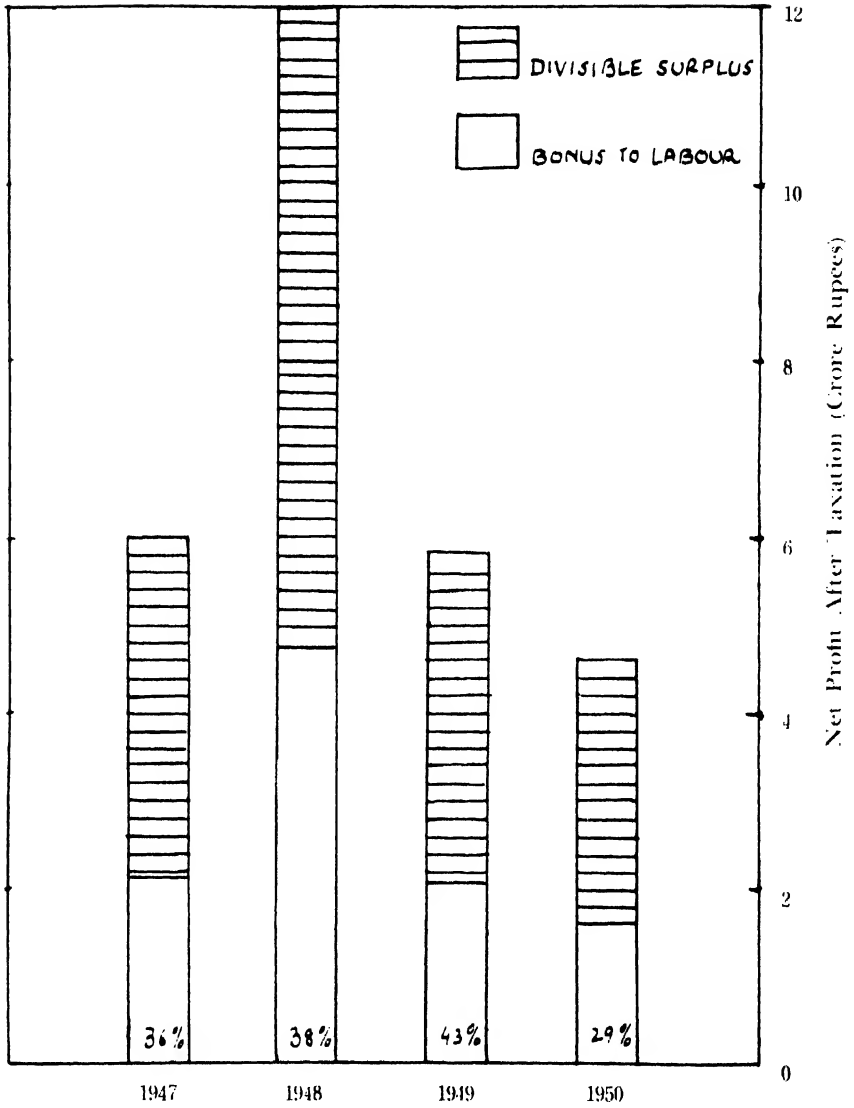
Furthermore, concerns with greater capacity to make profits are placed under a relatively greater burden of bonus payment during less prosperous times than the industry as a whole under the present system of bonus payments. This is so because in more prosperous times even the marginal units are enabled to make profits and in estimating the total of profitable financial results they are included. In less prosperous times, these units are excluded, and the aggregate of profits consists only of the results of better concerns in terms of profit-making capacity. If there is an identical basis of calculation of the bonus payable in both prosperous and less prosperous times than in the latter case, the better concerns have to bear the entire burden of a particular year's bonus payment. Conversely, the incidence on them of a given proportion of aggregate profits being paid out as bonus is lower in more prosperous times. Whether the two tendencies, operating to lower the incidence in one case, and to raise it in the other equate the burden of bonus payment is a matter to be determined by reference to the facts of the years to come, and not by argumentative hypotheses.

Although not forming more than 5 to 7% of the total wage bill, these payments have an unstabilising effect on the industry. Normally granted on a region-cum-industry basis, they are uniform payments for all mills within a given region.²⁰ This uniformity means that the profits of all the concerns in the region are aggregated and various assumptions about depreciation, liquid resources, replacement reserves, tax payments,

18. In 1949, only three mills were so excepted in Bombay, and in 1950 two such mills were excepted.

19. The inducement to mills with a small profit to convert it into a loss by manipulating the accounts in a small way, or in a more extreme case, by entering into a transaction that will yield a loss so as to obviate the need for making a much larger bonus payment can hardly be regarded as healthy.

BONUS ALLOCATIONS: BOMBAY MILLS



(Data adapted from Industrial Court Awards)

etc. formed on a similar basis. In view of the wide disparity in the profit-earning capacity of various mills, these industry-wise generalisations have but limited validity for the component individual units. A company with a smaller profit, under this principle, has to make a bonus payment that takes away a much larger proportion of its profits than is the case with a company having much bigger profits. The present system has averaged out, particularly in centres like Bombay and Ahmedabad, the difference in financial results between coarse, medium, and fine spinning mills. Moreover, the judicial refusal to recognise the difference made to the aggregate, and, therefore, to the final payment by the presence of unusually large or small concerns also results in the bonus payment having very widely different relations to the profits of each concern.²⁰

A widely accepted principle in the making of bonus payments is the omission of concerns making losses from the liability to make such payments.²² Two consequences follow from the judicial acceptance of this proposition. Firstly, it detracts from the region-cum-industry principle,²³ and secondly by excluding workers employed in those mills it creates the very same situation of disparity of payment.

The more or less regular payment of an annual bonus makes the worker in effect a residual claimant on a par with the shareholders, though not in status, of the net surplus arising out of the operations of any given year, after providing a certain minimum percentage by way of dividend or return on the capital employed. The tribunals have failed to evolve a satisfactory criterion for determining the aggregate of capital employed or the components of that capital.

It is to be also noted that the financial return to the shareholders is now dependent on the proportion of bonus payment to the volume of profits of their company (which is not likely to be the same as the general proportion laid down for industry in a particular region) and the prior need to find liquid resources with which to make bonus payments before dividends are paid out.

In the chart opposite we present the allocation of profits made in the bonus awards of recent years for mills in Bombay City. It is clear that the basis of bonus payments has not remained constant and there is a noticeable tendency to alter the other variables so as to yield a certain bonus payment. It is not implied that bonus payments have not declined

20. Many mill companies in the smaller centres obviously do not have the advantage of adopting the region-cum industry basis in their bonus payments because of the existence of one or only a few mill companies in the region.

21. The difference to the aggregate financial results and to the level of bonus payment in such a situation was almost forced upon the Industrial Court in the case of the Art-Silk Mill Industry of Bombay City, I.C.R. (Bom.), 1951, p. 836.

22. *Industrial Awards in India*, p. 60 *et seq.*

23. The Report of the Profit-Sharing Committee (1948-49) accepted this principle unanimously.

at all with downward shifts in profit. But it is equally definite that bonus payments have not altered in the same downward proportion with a decline in profits.

Other Elements in Labour Costs.—Labour costs now also comprise elements other than the basic wage, the dearness allowance, and the bonus payment. Leave with pay, as now laid down by the law, and taking into account the less than universal proportion of regular workers in Indian industry, amounts to about 4 to 6% of the basic wage and the dearness allowance combined. The latest legislative provisions about employers' contributions to provident funds will make an addition of another $6\frac{1}{4}\%$. Welfare provisions and facilities probably cost the industry upto 2% of the total wage bill. Higher administrative costs, particularly as a result of the new managerial approach to the problems of labour, have also become necessary. The legislative reduction of working hours has also had to be matched by a higher wage in many cases, and has had an upward effect on the total wage cost per man-hour in the industry.

Review of Main Trends.—A review of the major changes in the wage situation is offered below in two different contexts.

(a) The table submitted below traces the evolution of labour costs in Bombay mills.

					Cost (in pies) per Man-hour	
1875	...	...	...	...	5 to	6 pies
1900	...	...	...	...	7 to	8 pies
1914	...	...	...	...	9 to	10 pies
1921	...	...	...	...	20 to	25 pies
1937	...	...	...	...	18 to	23 pies
1948	...	...	...	...		100 pies
1951	...	...	...	...		130 pies

Based on official data, and adjusted for the approximate length in hours of the working day, the above figures are a reflection of the large variety of different forces at work. The magnitude of the changes effected in the last fifteen years is in sharp contrast to the extent of upward shift in wages in any comparable previous period, including 1914-21. Combined with the instability characteristic of the wage pattern traced earlier, the rise in wage levels points to the pressing need for the industry as a whole to approach everrising levels of labour deployment, and deepening of capital.

(b) Pointing to the same conclusion, and incidentally also indicating the effect of various judicial awards in the matter of minimum and standard wages, is the data submitted below. The provincial data

of wage payments and man-hours worked are arranged according to the proportion of man-hours worked at different levels of labour cost.

Cost in pies	Proportion of Man-hours Worked		
	1946	1947	1948
31 to 40 pies	10.5%	3%	
41 to 50 pies	34.0%	2%	1%
51 to 60 pies	2.5%	23%	7%
61 to 70 pies	62.0%	7%	5%
71 to 80 pies		14%	15%
81 to 90 pies		61%	12%
91 to 100 pies			60%
Average cost per man-hour	64 pies	74 pies	90 pies

Source: Based on Censuses of Manufactures, 1946, 1947 and 1948.

Since many wage awards came into operation only in 1948, the position in 1949, the first full year of their operation, is certain to show even a greater narrowing of the wage gap between various areas. In other words, the wage awards have fundamentally affected the major and for some mills the only competitive support available for continued profitable existence with a comparatively lower level of labour deployment in low wage areas.

To place matters differently, high wage costs are now a generalised proposition applying to the bulk of the industry, and not limited to a few isolated centres like Bombay. The reactions to high wage costs during the inter-war period on the part of Bombay Mills are traced in detail in the next section, but to anticipate some of our conclusions, a higher level of labour deployment than now obtaining is imperative, and may not be avoided.

These aspects of the present wage structure render the results of the study of similar situations in the inter-war period more significant. The following section is directed to such a study.

C. THE WAGE SITUATION : ALLIED ASPECTS

The variation in wage rates, accompanied by the very considerable rise in wage levels has had equally important repercussions on the levels of labour deployment and on some aspects of the job structure. The variation in wage rates probably has considerable causal responsibility for the shift in regional locale from centres like Bombay and Ahmedabad to low wage cost areas. The rising wage level has strengthened the tendencies towards capital intensification, and has given impetus to the attempts to approach superior levels of labour deployment. It is not

unlikely that the working of fixed capital on a more intensive basis is also influenced to some extent by the changes in wage levels.

We saw in the preceding section that wage costs in Bombay and Ahmedabad persistently exceeded, before 1944, the wage levels in other parts of the country. These implied that the Bombay and Ahmedabad mills, catering to essentially the same market had to have a greater ratio of machines to men than was the case or the necessity elsewhere. Influenced by various developments in the equipment patterns, and in turn shaping them, the industry now possesses varied patterns of labour deployment.

In the six tables that follow the various tendencies are crystallized in so far as the availability of data permits a clear picture.

The Occupational Structure : Bombay and Ahmedabad.—Table "A" brings out the changes in the pattern of occupational distribution of workers between two years, 1921 and 1937, in a centre like Bombay City, where the industry was declining in terms of the number of workers employed, the quantity of cotton consumed, and the quantity of yarn spun, although during the same period cloth production recorded an increase of nearly 50%. It will be noticed that most of the spinning occupations recorded a decline ; but, many of the weaving occupations also showed a decline.

TABLE "A"
The Changing Job Structure, Bombay

	1921	1937
1. Opener Attendants (Blow Room) ...	2,504	843 (D)
2. Card Strippers ...	957	402 (D)
3. Card Grinders ...	682	165 (D)
4. Lap Carriers ...	221	292 (E)
5. Fly Collectors ...	275	149 (D)
6. Carding Machine Attendants ...	488	784 (E)
7. Slubbing Frame Tenters ...	1,161	718 (D)
8. Inter Tenters ...	1,836	1,271 (D)
9. Roving Frame Tenters ...	3,984	1,835 (D)
10. Doffers ...	12,466	8,040 (D)
11. Siders ...	15,132	13,756 (D)
12. Mule Spinners ...	3,430	624 (D)
13. Reelers ...	10,511	5,901 (D)
14. Pirn Winders ...	2,445	3,184 (E)
15. Warpers ...	1,025	986 (D)
16. Warping Creelers ...	311	119 (D)
17. Back Sizers ...	415	438 (E)
18. Front Sizers ...	404	448 (E)
19. Size Mixers ...	204	203
20. Drawers-in ...	9	
21. Beam Carriers ...	43	
22. Fancy Jobbers ...	91	143 (E)

			1921	1937
23.	Front Calendermen	...	199	156 (D)
24.	Back Calendermen	...	238	199 (D)
25.	Cut-lookers	...	233	645 (E)
26.	Folders	...	934	1,485 (E)
27.	Piece Stitchers	...	153	224 (E)
28.	Motormen	...	44	273 (E)
29.	Wiremen	...	48	62 (E)
30.	Watchmen	...	1,603	975 (D)
31.	Steam Engine Drivers	...	74	10 (D)
32.	Firemen	...	366	147 (D)
33.	Oilmen	...	752	1,153 (E)
34.	Masons	...	73	113 (E)
35.	Carpenters	...	240	453 (E)
36.	Colour Winders	...	2,100	3,424 (E)
37.	Grey Winders	...	5,979	4,712 (E)

(D) denotes an occupation which had fewer numbers in 1937 than was the case in 1921.

(E)—denotes an occupation which had more workers in 1937, than was the case in 1921.

Note.—The 1921 figures have been throughout raised by 10% from the total as given in the Bombay Wage Enquiry of 1921 which covered only 90% of the cotton mill industry.

Sources: Adapted and compiled from:

- (1) Report of an Enquiry into the Wages and Hours of Labour in the Cotton Mill Industry, Government of Bombay, 1921.
- (2) Report of the Textile Labour Inquiry Committee, Vol. II, Final Report, 1931, Bombay.

The shift to the production of dhoties and saris with dobby borders is to be seen from the increase in the number of fancy jobbers. The fullest use rendered possible for certain types of equipment is to be seen in the decline of the occupations of calendermen. The decline in the number of steam-engine drivers is to be compared with the increase in the number of motormen, which is an index of the extent of electrification achieved in Bombay mills. The reduction in the numbers in the blow room and carding occupations (occupations 1, 2 and 3) is due to the adoption of short-cut processing on the one hand, and a reduction in the quantity of cotton to be processed, on the other. The reduction in frame tenters, doffers, and siders reveals a tendency towards superior levels of labour deployment as also a reduction in the quantity of yarn produced. The decline in mule spinning illustrates a declining productive technique withering away only slowly. The drastic reduction from 10,500 in 1921 to 5,900 in 1937 in the number of reelers is a consequence of the trade in yarn being lost by the mills of Bombay to upcountry mills. The remarkable increase in pirn winding is evidence of the shift of the industry from spinning to weaving. The growth of finishing and processing departments, to which we referred in the chapter dealing with equipment patterns, is not directly amenable to a quantitative statement of the same type, but the growth in the number

of colour winders from 2,100 to 3,400 is an indication of the magnitude of the development of yarn dyeing.

Table "B" deals with a situation which almost upto 1937 was diametrically opposite to that of Bombay. Ahmedabad was an expand-

TABLE "B"
The Changing Job Structure : 1923-1937, Ahmedabad

		1923	1937
1. Blow Room Machine Attendants	...	650	483 (D)
2. Card Grinders	...	113	127 (E)
3. Card Strippers	...	256	306 (E)
4. Lap Carriers	...	117	121 (E)
5. Fly Collectors	...	25	53 (E)
6. Card Tenters	...	460	398 (D)
7. Drawing Frame Tenters	...	221	868 (D)
8. Slubbing Frame Tenters	...	618	446 (D)
9. Inter Frame Tenters	...	833	646 (D)
10. Roving Frame Tenters	...	1,477	1,495 (E)
11. Siders	...	3,075	7,197 (E)
12. Doffers	...	1,370	5,642 (E)
13. Mule Spinning	...	130	Nil (D)
		Approx.	(E)
14. Reelers	...	1,244	1,411 (E)
15. Grey Winders	...	603	4,050 (D)
16. Pira Winders	...	623	105
17. Colour Winders	...	.....	2,174
18. Warpors	...	431	805 (E)
19. Front Sizers	...	232	381 (E)
20. Back Sizers	...	233	381 (E)
21. Size Mixers	...	137	150 (E)
22. Beam Carriers	...	96	62
23. Drawers-in	...	294	154
24. Front Calendermen	...	89	211 (E)
25. Back Calendermen	...	70	222 (E)
26. Cut-lookers	...	31	4
27. Folders	...	348	716 (E)
28. Piece Stitchers	...	28	58 (E)
29. Engine Drivers	...	76	70 (D)
30. Boiler Attendants	...	8	76 (E)
31. Firemen	...	161	272 (E)
32. Motormen	...	6	7 (E)
33. Wiremen	...	9	106 (E)
34. Carpenters	...	271	209 (D)
35. Masons	...	55	60 (E)
36. Watchmen	...	855	1,139 (E)
37. Fancy Jobbers	...	...	425

(D)—denotes an occupation which had fewer numbers in 1937 than was the case in 1923.

(E)—denotes an occupation which had more workers in 1937 than was the case in 1923.

Sources: Adapted and compiled from:

(1) Report of an Enquiry into the Wages and Hours of Labour in the Cotton Mill Industry, Government of Bombay, 1923.

(2) Report of the Textile Labour Inquiry Committee, Vol. II, Final Report, 1941, Bombay.

ing centre by any of the three criteria : cotton consumed, yarn produced, and the number of hands employed. In contrast to the industry in Bombay very few occupations in Ahmedabad registered a decline in numbers. But the comparatively smaller growth in some occupations as compared to others is an indication of the operation of tendencies towards mechanisation and higher levels of labour deployment. This is true of the blow-room and carding occupations, and of frame tenters, in particular.

Three differences in the Bombay and Ahmedabad occupational patterns may be noted. (1) The number of fancy jobbers in Bombay (143) is only about one-third of the figure in Ahmedabad. This indicates the greater specialisation of Ahmedabad in the sari and dhobi trades. (2) The small number of reclers in Ahmedabad, (which too is mainly due to the necessities of hank-dyeing of yarn used in the weaving of some cloths), indicates the very limited reliance on the yarn trade in contrast to Bombay City. (3) Pirn winding is not favoured in Ahmedabad where it is a declining occupation in contrast to Bombay where it was one of the most rapidly expanding occupations.²⁴

Superior Levels of Labour Deployment.—Tables “C”, “D” and “E” deal with various aspects of weaving labour deployment, to bring out by way of illustration the influence of wage rates.

TABLE “C”
The Changing Job Structure : Weavers

			Weavers minding					
			1 loom	2 looms	3 looms	4 looms	6 looms	10 looms
1937	Bombay	...	969	21,463	385	2,825	209	...
	Ahmedabad	...	62	22,077	4	129	...	...
	Sholapur	...	1,097	2,644	1	22	...	...
1934	Bombay	...	744	17,425	908	1,453	113	2
	Ahmedabad	...	58	22,550	150	1	...	...
	Sholapur	...		not available				
1921	Bombay	...	502	30,088	134	53	...	...
	Ahmedabad	...	...	6,971	223	221	...	...
	Sholapur	...	633	1,898	...	...	...	...

Sources: Adapted and compiled from:

- (1) Report of an Enquiry into the Wages and Hours of Labour in the Cotton Mill Industry, Government of Bombay, 1923.
- (2) Report of the Textile Labour Inquiry Committee, Vol. II, Final Report, 1941, Bombay.

24. The fact that Bombay mills employed only 975 watchmen in 1937 as against 1,139 watchmen in Ahmedabad is perhaps an illustration of the type of economy that is practicable in a large-sized unit.

In Table "C" the progress of weaving labour deployment in Bombay, Ahmedabad and Sholapur between 1921 and 1937 is recorded. It may be noted that the 1937 position reveals the most significant upward changes in labour deployment in the case of Bombay City, followed rather tardily by Ahmedabad, with Sholapur being a poor third. Conversely, only in Sholapur single-loom weaving is able to expand.²⁵

Table "D" divides loom-shifts according to the number of looms per weaver. The figures for 1921, on account of inadequate coverage for centres other than Bombay City, prevent the figures for Bombay City and Bombay Presidency from being comparable *inter se*. The broad similarity of these patterns in 1921 is nonetheless in remarkable contrast to the diversity of the patterns in 1937. In the latter year, nearly 30 per cent of the loom-shifts in Bombay City were being worked on the basis of more than 2 looms per weaver, whereas only about 3% of the loom-shifts in the rest of Bombay Presidency were being worked on the basis of more than 2 looms per weaver.

TABLE "D"

Loom-shifts according to Labour Deployment of Weavers

				1921		1937	
				Bombay City	Bombay Presy.	Bombay City	Bombay Presy.
1 Loom	...	...	502	1,198	519	3,700	
2 Looms	...	...	60,176	82,242	42,922	10,239	
3 Looms	...	...	402	1,197	2,055	2,070	
4 Looms	...	...	212	1,148	11,300	11,916	
6 Looms	...	...	...	...	3,054	3,054	
Total	...	...	61,292	85,785	59,350	123,138	

Source: Adapted from Wage Enquiries and Reports, mentioned earlier.

Table "E" is a rather tenuous attempt at presenting an industry-wise picture of weaving labour deployment. The figures are not strictly comparable because those for Bombay, Ahmedabad and Sholapur relate to 1937, whereas the rest of the figures relate to 1944 or 1945. There is reason to believe that Bombay recorded considerable progress in its level of labour deployment after 1937, and upto 1940 and the comparative picture for Bombay City is therefore likely to be an under-statement. Most of the weavers minding 6 and 12 looms are working on automatic

25. Single-loom weaving on looms of greater width or more complicated looms is not to be treated in the same way as single-loom weaving on an ordinary plain loom. Bombay's 969 single-loom weavers in 1937 were divided almost equally between these two types of looms.

TABLE "E"
Weaving Labour Deployment— All-India Position (1941)

Centre	Single loom	2 looms	2 & 3 looms	3 looms	4 looms	6 looms	12 looms
Coimbatore	1,416	340	...	...	...	...	...
Madras	94	493	...	...	...	...	80
Madura	94	139	...	...	...	...	509
Cawnpore	1,268	8,586	...	340	138	...	...
Bengal	62	2,735	...	9	...	...	...
Delhi	296	2,329	...	...	...	...	...
Lahore	34	128	48	...	...	...	...
Lyallpur	107	871	...	...	...	...	...
Nagpur	3,834	1,122	...	...	...	...	...
Indore	993	5,197	...	...	...	...	...
Baroda	...	2,201	...	...	...	...	...
Bangalore	347	738	...	421	14	187	...
Cochin	706	269	...	...	...	...	...
Bombay*	967	21,463	...	685	2,825	209	...
Ahm. dabad*	62	22,077	...	4	129	...	...
Sholapur*	1,097	2,644	1	21	22	...	...

* The figures for Bombay, Ahmedabad and Sholapur relate to 1937.

Sources: (1) Report of the Textile Labour Inquiry Committee.

(2) Labour Investigation Committee, Main Report.

looms, although it is not unusual for upto 16 plain looms being minded by weavers in other countries.²⁶

Two facts are to be noticed about Table "E". (1) Centres like Nagpur, Coimbatore, Sholapur, Indore and Cochin have single-loom weaving as a matter of general practice, from 30 to 80% of their loom-shifts being worked on that basis. (2) Apart from the compulsion of higher wages in centres like Bombay City and Ahmedabad, entrepreneurial initiative in this direction has also made itself felt in lower wage cost centres.

It also brings out the tremendous possibilities for the future, that would appear to be feasible as a result of the experience of many years of working on 3 and 4 looms systems by some of the employers.

Table "F" brings out a complicated pattern of adjustments as between centres when a major shift in regional locale is taking place. It is clearly seen that the decline of reellers is a matter of greater concern for Bombay City than it is for the Presidency as a whole. The case

26. The bulk of plain looms in Britain were managed in 1937 on 3 to 6 looms basis. The range varied from 1 to 16. Most 2-loom weavers are engaged either on the widest or the most complicated loom jobs. In 1937, no less than 15% of the British weavers were engaged on 6 looms, 65% of them being women. This only indicates that the progress made in India in the direction of superior labour deployment is not in any way near the achievement in other countries. *Idé E. N. Gray, op. cit., pp. 6, 8, 9 and 17.*

of Sholapur, however, is an interesting exception. Lower wage costs cannot explain the decline therein, Sholapur being itself a low wage cost centre. We may surmise that conversion into a weaving industry might have been responsible for this position.

TABLE "F"
Territorial Distribution of Reelers

				1921	1937	Percentage Decline or Increase
Bombay	...	...	...	10,511	5,901	- 42%
Ahmedabad	...	...	...	1,336	1,309	- 1%
Sholapur	...	...	...	2,389	1,290	- 56%
Other Centres	...	...	...	1,262	3,501	+ 148%
Bombay Presidency	...	...	...	15,498	12,001	- 20%

Note.—1921 figures have been adjusted for the shortfall in the proportion of workers covered during that inquiry.

Source: Adapted from sources mentioned earlier.

In the course of evolution, it stands out as a necessary corollary from the preceding tables, mills in India have attained substantially different levels of labour deployment and of labour costs *inter se*, although it is not possible to easily define the categories into exclusive types of capital-labour alignments, as they shade off into one another. On the one hand we have mills in South India employing as many as 30 men per 1,000 spindles on counts 24 (average) as against mills in Bombay and Ahmedabad having a complement of only about 10 to 12 men per 1,000 spindles on the same count. Mills in isolated cases are also known to have a labour deployment pattern that would compare favourably with the United Kingdom, though not with the United States.

We give below figures relating to four mills having different ratios of labour to machinery from each other, although in no case is the internal handling of materials done mechanically.

				Mill A	Mill B	Mill C	Mill D
Average count	...	...	...	14s	14s	18.5s	40s
Hands per 1,000 spindles	...	...	...	16.6	8.5	5.8	7.9
Production on 1,000 spindles per hour (in lbs.)	...	...	...	54.9	66.4	50.8	15.6
Production per man-hour (lbs.)	...	...	...	3.30	7.81	8.74	1.96
Production per man-hour converted to 20s (lbs)	...	...	...	2.31	5.467	8.08	3.94*

* Calculated.

Source: Kapoor R. N. and Agarwal J. C., Low P.M.H. in Indian Mills, the Eighth All-India Textile Conference Souvenir, p. 79.

This broadly represents the state of technical affairs in the Indian mill industry. The failure to reach a higher level of labour deployment in the fine spinning section, already commented upon earlier, is to be also seen herein. The difference in the number of man-hours required to obtain a given volume of comparable physical production has, in view of the dissimilarity in wage levels, a meaning in terms of cost that is not identical as between centres. The implications of this tendency are complicated by the differences in the dearness allowance rates, and by the fact that the dearness allowance is a flat figure for every worker irrespective of the level of his basic emoluments. Thus, in Bombay City a two-loom weaver earned Rs. 108, a four-loom weaver earned Rs. 131 and a six-loom weaver earned Rs. 141 in June²⁷ 1950, as compared to the basic wages of Rs. 55, Rs. 78, and Rs. 81 respectively. The latter provides for a difference of 60% between the wages of a two-loom weaver and a six-loom weaver. But the present position of the dearness allowance brings down the margin to only 29%.

Moreover, the standardisation awards, by failing to evolve a common standard of differentials to be granted in the case of a greater number of machines being minded by a worker make higher levels of labour deployment a question to be treated mainly in local terms. Thus, in Bombay the earnings of a four-loom weaver are only about 21% higher than those of a two-loom weaver, but in Madras they are 10% lower, and in Uttar Pradesh they are 80% higher.

Labour Unrest.—The variety of miscellaneous considerations that can be conveniently grouped under 'Labour Unrest' now affect mills to an increasing extent. A detailed consideration of these falls outside the scope of the present work. But the gravity of the position may be briefly stated in terms of the consequences thereof to a section of the industry by way of loss of production.

*Losses in Production due to Strikes and Hartals
(Mills in Bombay City)*

Year			Spindle-hours lost (Millions)	Loom-hours lost (in lakhs)	Loss of yarn production (Million pounds)	Loss of cloth production (lakh yards)
1945	...	...	364.90	7.89	15.20	473.13
1946	...	...	839.32	18.05	31.97	1082.93
1947	...	...	753.57	20.10	31.40	1206.14
1948	...	...	296.72	5.78	12.36	340.73
1949	...	...	93.85	1.45	3.91	87.03
1950	...	...	2386.01	46.82	99.41	2809.07
1951	...	...	125.75	2.45	5.24	146.74

Source: Reports of the Millowners' Association, Bombay.

27. Figures from the *Indian Labour Gazette*, May 1951—Labour Conditions in the Cotton Mill Industry in India, pp. 882-883.

An equally serious manifestation of labour unrest is the growing spirit of indiscipline among industrial workers manifesting itself in the extreme, in the form of physical assaults on the superior staff of the mills.²⁸ In the eight months ending 31st August, 1946, about 75 assaults were committed in Bombay mills, victims including managers, other superior staff, clerks and time-keepers. Twenty-three of the 75 victims sustained serious injuries.²⁹ In 1948 and 1949 for all the industries in Bombay, 35 and 34 assaults respectively, which were not fatal, were recorded by the Police. One fatal assault was made in the former, and three in the latter year.³⁰

In a Bombay mill (which admittedly is an extreme case), the behaviour of workers was characterised by the Industrial Court as disorderly and riotous, involving general indiscipline, hostility towards officers expressed in ubiquitous forms like hissing at the officers, assaults and causing fear to their lives to the extent of making them leave their jobs.³¹

In another extreme case, also involving a Bombay mill, there was progression from insubordination to acts of violence ending in the murder of the Weaving Master.³² In still another extreme case, the Vice-President and a member of the Managing Committee of a trade union were convicted for throwing stones at the mill premises.³³

In brief, with the exception of some centres, industry-wide forces of indiscipline and defiance make the maintenance of industrial discipline a difficult proposition. To the extent that this spirit is general, industrial efficiency must rest on an unstable and tenuous basis. Excepting

28. It is not suggested that this is entirely new, for there is the instance of an Assistant being done to death brutally in 1928, *vide* Report of the Court of Enquiry presided over by Mr. Justice H. G. Pearson, which dealt with the 1929 general strike in Bombay mills.

29. *The Indian Textile Journal*, 1945-46, p. 1079; the Editor's note to an article by Sorab Dinshaw, Assaults on Officers of Textile Mills.

30. Figures given in K. A. Zachraiah, *Industrial Relations*, unpublished Ph.D. Thesis, 1950, registered at the University of Bombay. Dr. Zachraiah suggests that since the ratio of non-fatal assaults to the total number of workers employed is 1 : 3,000, and only 1 : 30,000 in the case of fatal assaults, it is not proper to regard physical assaults as a general symptom affecting industrial workers. This cannot be accepted because (1) it ignores the general intimidation of the superior staff that is caused and intended; and (2) that Dr. Zachraiah's data, because they do not take into account the far greater number of non-cognisable offences of simple assault, which go unrecorded in Police figures, underestimate the prevalence of the violent mood.

31. *Bhikaji Sakharan Amberkar and others v. Jam Manufacturing Co. Ltd.*, Bombay, 1946 47, I.C.R. (Bom.) pp. 15-16. In another chapter we have traced the changes in the composition of the superior staff of mills. The complaint applying widely to officers of the old type is that they too frequently took to physical assaults on operatives. In Ahmedabad there is a long-standing complaint of this type of behaviour. And only a few years back, in a case before the Industrial Court, there was a complaint about an operative being assaulted and abused by a senior officer. [*Jalgaon Girni Kamgar Union v. Khandesh Spinning and Weaving Mills Co. Ltd.*, Jalgaon, I.C.R. (Bom.) pp. 18-19.]

32. 1948 I.C.R. (Bom.), p. 377.

33. 1948 I.C.R. (Bom.), pp. 195 *et seq.*

extreme cases,³⁴ this tendency, however, does not directly affect the productivity of labour.

Summing up.—The wage situation is summed up in the following propositions :—

(1) Wage rates now display a tendency to rise faster than was the case at any time before 1939. Legislative and judicial sanctions behind the extant wage structures, the strength of the trade union movement, and the more complicated machinery, judicial and governmental, now interposing between the employer and the employee are all likely to make downward adjustment in wages a more difficult and prolonged process.

(2) Wage rates are not only many times as high as they used to be, but are also less disparate as between centres. This has obvious significance for the rate at which higher levels of labour deployment may have to be reached in the near future.

Indirect costs and bonus payments all go to increase the burden of direct labour costs.

(3) Levels of labour deployment are different from mill to mill, and from centre to centre, the level of wages being the most important single factor at work in the situation, speaking generally.

(4) Indiscipline and unrest continually undermine industrial efficiency.

34. See Interim Report of the Inquiry into Khandesh Labour, 1916, for the details of such an extreme situation.

CHAPTER III

THE ORGANISATIONAL SET-UP : EVOLUTION AND APPRAISAL

The internal administrative set-up of any industrial unit is the result, usually ill-defined but not as vague, of the direct pull of structural, financial and personal influences, operating therein, tending persistently to acquire the utility and authority of precedents. The latter provides that base of stability which must support the sequence of variations that are inevitable in a growing and diversifying industry of non-homogeneous products like cotton textiles. Undoubtedly, one of the most significant phases of cotton textile development in India is the continual strain placed upon established administrative patterns by higher scales of more diversified output, accentuated by the varying rates of growth of different units, and their adaptation and adjustment to changing constellations of economic variables. The nature of these modifications, and the efficacy of the resulting patterns form the subject-matter of the pages that follow.

A. EVOLUTION : MAIN ASPECTS

1. **The Legal Status.**—Extensive use of the corporate form of enterprise presently characterises the mill sector of the cotton textile industry, and the bigger concerns in the non-mill sectors. This phase of development dates back, historically speaking, to the earliest mill companies. It gathered force with time and the post-war boom of the early twenties saw the last of the more important groups of proprietary cotton mills change over.¹ The Millowners' organisation in Bombay characteristically assumed its name in the 1880's. Fifty years later, in 1928, only 12 out of 212 concerns in Bombay Presidency were proprietary. And, the position was not materially different in other regions.

But, the process of incorporation is not properly regarded as concomitant with wider ownership on an equally impressive scale of shares, in the earlier stages. In the first place, there is a significant number of private limited companies whose membership is statutorily limited ;² and public companies which have membership lists that barely satisfy the legal qualifications as to minimum membership,³ not infrequently by shares being held by one or two interests in the names of friends and relatives, are not uncommon. Thirdly, apart from the above categories, in most of the older mills managed by the same firm of Indian managing

1. The Sassoons floated their dozen mills or so, as a public limited company in 1920.

2. Shah S. M., *Lectures on Company Law*, 1950, p. 163 *et seq.*

3. *Ibid.*, p. 26. Sections 6-8 of the Indian Companies Act prescribe a minimum number of seven members for a public limited company.

agents, their original substantial holdings have not at all altered, giving them substantial proprietary interests in the concerns. Finally, in many cases where the managing agent's holding has, proportionally or in absolute terms declined, he still continues to be usually a substantial shareholder, having the biggest individual holding. The broad tendency holds especially in Ahmedabad, wherein Sir Govindrao Madgaokar⁴ put the proportion at 20 to 25% of the shares, and in smaller concerns where the capacity to receive wider public support is limited by the lesser 'public' prestige of the managing agency firm. Its strength is remarkably low in the case of cotton mills managed by non-Indian interests,⁵ as they have received better and wider public support, supplemented by the desire to earn more by extensive 'managing' rather than intensive 'owning'. The strength of proprietary elements is also proportionally lower in the case of the biggest companies."

In fine, a substantial proprietorial stake is a prerequisite to and coincident with top management responsibilities in the cotton mill industry. The importance of the former varies partly with the size of the company, partly according to regional characteristics, and, partly, on the basis of the managing interests being Indians or not.

The significance of proprietorial elements is drastically higher in the non-mill sector, where the average unit is smaller and where capital requirements are proportionally lower.

There is a rapid transformation of managing agency firms in the last twenty years, as can be seen below, to the corporate form :—

					No. of mills managed by limited agency companies	
					1930	1950
1.	Bombay City	...	...	...	15	38
2.	Ahmedabad	...	...	...	13	35
3.	Bombay Presidency, excluding 1 & 2.	...	...	...	6	21
4.	West Bengal	...	...	...	8	11
5.	Uttar Pradesh	...	...	...	5	14
6.	Madras	...	...	...	5	24
7.	Rest of India	...	...	...	9	29

Source: Data collected from Millowners' Association, Bombay, Annual Statements.

4. See *History of Wage Adjustments in the Ahmedabad Textile Industry*, 1936-37, Vol. IV, Sir Govindrao's award as Umpire in a dispute between the Mill-owners and the Textile Labour Association.
5. This was one of the reasons that enabled the easy acquisition of the control of the Colaba Land Mills Co. Ltd., in 1946, from so well-established and reputed a firm of Agents as W. H. Brady & Co. Ltd., by a group of speculators.
6. The Century Spinning & Weaving Mills, Bombay, which was acquired recently by the Birlas from Sir C. V. Mehta & Co. Ltd., was one of the first ten mill companies in 1950, in terms of gross assets employed. The transfer was facilitated because of the small holding of the Agents, a firm of excellent reputation.

The trend has three facets : (1) Some of the older British firms have transformed themselves into public limited companies during recent years. The most significant examples are Kettlewell, Bullen & Co. Ltd., Killick Industries Ltd., and W. H. Brady & Co. Ltd.

(2) Wider prevalence of the practice appears to be actuated by the progressively higher rates of personal income taxation as against the tax-rates charged for corporate incomes. The corporate rates of taxation are almost flat, whatever the level of income, and therefore work out higher than the rates applicable to the comparable income-ranges of personal taxation, upto a certain quantum of income. They work out significantly lower beyond that particular level, which varies with the tax-rate structure of any particular fiscal year. In 1948-49, this level would have been Rs. 100,000. Today, it is Rs. 20,000 higher.

(3) Incorporation as a company has the advantages of being in the eyes of law an artificial person, with perpetual existence, unaffected by the provisions of the laws of contract and partnership with regard to the nullifying effects of death, or insanity of either the partner or the party to a contract.^{7 8} Theoretically, it facilitates a further extension of the divorce of ownership from management, by transferring the ownership of the managing agency firm from a few partners or an individual to a company (whether public or private) to control the working of which only one share plus 50% of the number of shares would be required to be possessed at the maximum, and probably around 25% only normally. In a small number of cases, this capital base has been further reduced by the original interests being the managing agents of the managing agency company, pursuant to an agreement of the type entered into between managing agency firms and the companies they manage. The possibility of mortgaging or offering by way of security the shares of the managing agency company, enables a more flexible and a more intensive use of the capital resources of the dominant interests.

2. The Managing Agency System of Top Executive Management.

—The managing agency system has received considerable attention in Indian economic literature. The discussions have centred, it is submitted, around (i) the legal aspect of the agreement which forms the base of the managing agency system, (ii) a historical appraisal of the promotional and financial services " rendered under the system, and the

7. Sir Dinshaw Mulla, *The Indian Contract Act*, etc., 1916, pp. 31-6.

8. *Ibid.*, p. 445.

9. Das Nabgopal, *Industrial Finance in India* ;

Lokanathan, P. S., *Industrial Organisation in India* ;

Wadia, P. A. & Merchant, K. T., *Our Economic Problem* ;

Mukerjee Radhakamal, (ed.) *Economic Problems of Modern India*, Vol. 1 ;

Acharya, S. P., *Business Organisation and Administration in India*, M.Com. Thesis, Bombay University, (1948) (published since).

adequacy and nature of the rewards obtained therefor, and (iii) a discussion of the drawbacks of the system as manifested in examples of corruption and inefficiency or advantages obtained legally but unfairly when judged from the standards of the accuser. Some attempts at comparing two sectors of managing agency operations—Indians against non-Indians¹⁰—and one centre with another (Bombay agents unfavourably differentiated from their Ahmedabad compeers, is a case in point)¹¹ have also been made.

The most significant gaps in the existing analyses arise from their indifference to the changing organisational requirements within the industry, and from the failure to recognise, in the case of more general judgments, the differences in the functions of top executive management, according to the scale of operations of the company in question.

Considerable confusion of thought exists, attributing to the prevalence of the managing agency system, effects that flow from the corporate system of enterprise, and are to be found, as such, in every country. Not infrequently, apart from the inaccuracy of facts on which the analysis is based,¹² arbitrary criteria are applied, leading only to a pre-judgment of the issues involved.

In the course of this chapter an attempt is made to fill in some of the gaps, and to treat the organisational set-up in its proper, wider perspective.¹³

3. Functions—Scale and Scope.—The average unit in the cotton mill industry in 1950 had more than 25,000 spindles, and 460 looms, as compared to the 1908 figures of 23,700 spindles and only 280 looms.¹⁴ To this growth in spindleage and loomage should be added the implications of the diversified pattern of equipment crystallized in the last chapter.

This, however, is an understatement of the rate of physical expansion in important sectors of the cotton mill industry, where the pace is substantially faster than the growth pattern of the rest of the industry:

10. Lokanathan, *op. cit.*, pp. 214 *et seq.*

11. As an illustration may be quoted Lokanathan, *op. cit.*, pp. 314-20.

12. An example should suffice. It has been repeatedly asserted, mildly and circumspcctly by the Tariff Board of 1926, and categorically by others including Dr. Lokanathan, that Bombay managing agents were not technically qualified, in adequate numbers. As pointed out by the Millowners' Association, Bombay, in evidence submitted to the Tariff Board of 1932, this is not a wholly correct description of the situation (Vol. I, p. 79).

But even otherwise, where is the basis for arguing that technical qualifications make a better executive? or, for that matter that a man qualified in spinning or weaving is equally good at judging the finishing sections? Management in a fast moving industry like cotton textiles implies more than three or four years of conditioning in a technical institute.

13. For the beginnings of an analysis in these broader terms see Mehta S. D., *Some Aspects of the Managing Agency System*, *Bombay University Journal*, January 1953.

14. Calculated from Millowners' Association, Bombay, Annual Statement.

The biggest companies of today, with gross assets exceeding in 1950 Rs. 300 lakhs, have had even more remarkable and diversified patterns of expansion.

The reaction to these diverse trends in the nature, magnitude and pace of physical expansion display even a greater range of complexity depending on the pre-expansion structural aspects of the organisation of the units affected and the men who comprised the organisation.

The number and complexity of functions has grown more universally, partly in response to the trends just mentioned, and partly because other influences have been at work. The levels¹⁵ of taxation, municipal, State and Central, have risen to higher levels and their legal basis is characterised by greater complexity ; the corporate laws have become more demanding, and vaguer, the principles shrinking to microscopic dimensions under the burden of decades of precedents laid down in decided cases ;¹⁶ the State has assumed the role of a party to almost every phase of industrial activity and in other cases, extended its support to institutions like trade unions, and in still other cases, created institutions to facilitate the crystallisation of its notions of social justice in matters industrial ; the increasing resort to banks for working capital, and the changing patterns of the raw material situation and consumer preference have called for new departments, and newer designations in the mills : rising labour costs and consciousness have demanded not only a different type of organisational approach to these problems, but have also brought into existence the new class of 'labour officers', and impelled newer methods of work-organisation, and labour deployment, supplemented by capital intensification and increased mechanization. These and other changes have continually altered the competitive balance between mills and mills, and regions and regions (the distinctions cutting across each other), bringing in their wake only further changes, and so on, in continuing progression.

In several directions older problems have disappeared. The problems of labour have ceased to be those of availability and ignorance of things mechanical, except during abnormal times.¹⁷ The investor is no longer as shy about corporate investments, and no longer requires the same level of returns as inducement.¹⁸ Banks are more forbearing,

15. In a 19th century balance-sheet of a mill company the income-tax of a few hundred rupees on a profit of a few lakh rupees, is written off as an item of expenses. *Life of Ranchhorelal Chhotalal*, by Badshah, B. R. (in Gujarati), pp. 30-1.

16. The Indian Companies Act of 1913 is an illustration in point.

17. The Second World War had this important consequence from 1943 onwards, upto the end of 1947 or so, in centres like Bombay and Ahmedabad.

18. The Tariff Boards of the twenties regarded a 8% return on fixed capital, and a 6% return on working capital as the minimum rates necessary to induce industrial investment ; in the last few inquiries 6% on paid-up capital has been regarded as adequate. See *Report of the Fiscal Commission, 1949-50*, Vol. I, p. 175.

and the financial controversies of the thirties now belong to economic history.¹⁹

The changing content of and emphasis on different aspects of management has, it may then be said, continually expanded the range of these functions, and also led to a more elaborate division of them for the mill industry as a whole. In a clear grasp of these aspects lies the key to a better understanding of the problems of the organisational set-up inside cotton mills in particular, and probably, in relation to the entire world of Indian industry.

4. Technical Personnel.—Factors determining the industry's early requirements of personnel were : (i) the simpler and cruder equipment alignments during the first fifty years and more ; (ii) the proprietorial control of units which were much smaller ; (iii) the fewer and simpler functions that were needed to be performed ; (iv) the overwhelming proportion of cheaper and coarser staples in the production pattern ; and (v) the utter entrepreneurial ignorance of the management of technical aspects. This state of affairs secured to the industry a more or less exclusively non-Indian staffing of the managerial and supervisory cadres, a position that continued longer than would have been otherwise necessary, as many of the first mills had English participation either by way of partial or complete ownership or top management, and to a smaller extent, because the machinery installed was exclusively British.

A number of factors conspired to substantially maintain this state of affairs. British participation in the industry did not slow down until after 1914. Equipment patterns were equally constant ; and, the Parsi millowners,²⁰ who with the Britishers, made up the bulk of millowning class, probably preferred their own community members, raising them gradually to higher positions. Indeed, according to the Census of 1911,²¹ 572 persons of non-Indian origin, other than workers, were employed in the organised cotton textile industry, which represents an average of more than two per mill, the bulk of them being in superior technical positions, which were also then fewer in number per mill than is the case today.

The process of wider Indianisation of the technical cadre had started quite early in the mills belonging to Indians other than Parsis, the first recruits to the juniormost ranks being the more ambitious jobbers,²² and the more imaginative among the clerical staff. Needing no

19. The point is dealt with in greater detail elsewhere. Bank advances to the industry have varied between Rs. 30 to 52 crores during the last four years, and rates have varied from 2½ to 8%, for individual mill companies.

20. Freda Utley, *Lancashire and the Far East* (p. 300) divides 81 Bombay Mills in 1927 as follows: Parsis, 22 ; other Indians, 34 ; and non-Indians, 25.

21. *Statistics of British India*, Vol. I, 1918, p. 5.

22. The older set of present managers and departmental heads are in many cases drawn from these two groups of people. It is wrong to believe that the jobber has always been exclusively recruited from the same social strata as the bulk

other qualifications (except, perhaps, a modicum of elementary education), these men working for a wage substantially lower than their non-Indian counterparts, had by 1930 displaced the junior European technician almost completely from the Indian-owned mills, and very substantially from mills managed by non-Indians.

The displacement at higher levels proceeded, naturally enough, more slowly and started later, quite a few higher jobs (as departmental heads, and managers) being still open to them even in mills owned by Indians. The statistical evidence available is adduced below for the years 1895 and 1940.

Composition of Mill Officers in Bombay City

Year	Managers		Spinning Masters		Weaving Masters		Engineers		Carding Masters		Total	
	Europeans	Indians	Europeans	Indians	Europeans	Indians	Europeans	Indians	Europeans	Indians	Europeans	Indians
1895	27	28	21	30	13	14	23	38	20	31	104	141
1940	20	56	13	74	17	58	8	87	10	72	68	347

Source: Data adapted from G. N. Vaidya, *Cotton Mill Staff in Bombay*, op. cit., pp. 206-7.

Apart from the wider ownership of cotton mills, and the cheaper cost of the Indian technician, the growth of the Victoria Jubilee Technical Institute in Bombay, and to a lesser extent, the development of the Ranchhorelal Chhotalal Technical Institute in Ahmedabad has contributed significantly to the Indianisation of the technical cadre.²³

The comparatively lower standards of many technical institutions, and their slow and late growth have clouded their tremendous effect on the development of mills. The technician in Indian mills, whether non-Indian or Indian, was before the spread of technical education, what in the mill world is spoken of as the 'practical' man. His basic education was usually only elementary, and his knowledge of machines was acquired, over many long and tedious years of working inside the mill,

of the workers, as is the position now. According to the information supplied to me by two of these gentlemen, at one very early stage, it was not uncommon to find even Parsis as workers inside mills. I have come across, in my rounds of Bombay mills, several Parsi oilers and fitters, but the Parsi as a worker in the lower grades seems to have disappeared completely.

23. There was one further factor. In a few cases (mention of which is no reflection on the otherwise excellent record of the British technician in India), the blundering ignorance of the most ordinary of Lancashire men—lapearriers, sweepers, oilers and fitters—who came out straight as mill superintendents, and departmental heads to India was responsible for a gradual withering away of the white man's superiority in the eyes of Indian technicians, at first, and mill agents, later. For illustrations of this type, see evidence submitted before the Tariff Board of 1926, Vol. IV, p. 321.

slowly and painfully. Rules of the thumb had a sacrosanctness that was handed over for safekeeping from one generation of technicians to another. The training, to put matters rather tersely, was almost exclusively a matter of manual habit, time-consuming, and incapable of rapid transmission. An attitude of secretiveness helped to make the prize even more elusive,²¹ and a free and frank exchange of views on technical matters was not even to be dreamt of outside narrow circles of close personal friends, a coterie which would not usually include, we may guess, the lower hierarchy of mill staff. The feeling that fitting up a spinning frame or a card, or the arrangement of the settings of the latter, or the cooking of a particular composition of size, were the achievements of a lifetime led the older set of technicians into a position of vested interests, trying to thwart the growth of technical education by scoffing at academic, bookish knowledge, by making mountains out of the mole-hills of the difficulties that the new trainee's transformation of knowledge into mill practice necessarily involved, and by keeping the latter, as far as possible, outside the know of things. A vast group of mill-owners faithfully repeated the opinions of their old-world technicians, and took an attitude of indifference, when it was not hostility, in the matter of employing them.²² But progressive interests, which had indicated their conviction in the matter by making contributions to funds for starting the institutions continued to pull their weight in favour of the technically qualified persons. Twenty-five years ago, in 1926 or thereabouts, this was substantially the position, although increasingly the balance was tilting in favour of the products of the institutions.

The years succeeding gave increasing evidence of the utility of an educated mind, more particularly in contrast to the failure of the older type of technicians to arrive at superior levels of labour deployment, which became a compelling necessity in centres like Bombay. Facilitated by the requirements of the situation for materially superior types of technical knowledge and skill, and the ripening of the earliest recruits of the new type into seasoned departmental heads capable for the first time of influencing the choice of their assistants, the trend has pro-

21. *The Indian Textile Journal*, Golden Jubilee Number, p. 319, refers to the secrets of individual spinning masters, in the matter of roller varnish; see also reference by G. N. Vaidya, *Cotton Mill Staff in Bombay*, pp. 201 and 207 of the same journal. In a very subdued form, this tendency towards secretiveness is still come across.

22. From impressions gathered by the present writer in the course of talks with several persons, a further qualification would appear to be necessary. With the spread of general education, there was a continual improvement in the basic general educational background of a great proportion of the newer recruits from the earliest stage onwards. This tendency, it was asserted, was already in operation before more formal technical education made substantial gains. Quite a few of this set now occupy the highest technical and managerial positions in the industry. They still recall the general verdict of rashness on their decision, despite being educated men, to join the mill industry. And, this was true upto the end of the twenties at any rate.

gressed to not merely their unstinting acceptance, but regarding such qualifications as prerequisites even for the lowest type of supervisory jobs.

The growth of formal technical education, however, has not adequately ripened into superior forms.²⁶ Until recently, most of the institutes had only 'diploma' courses, spread over a period of two to four years, although the more ambitious man could always go to Manchester for higher technical training. Admissions were not always keyed to desirable levels of minimum general education, and the gradual depression of remuneration levels (which were originally high being geared to the standards of living of non-Indian immigrants) kept out the better Indian student from these trades, generally speaking.²⁷ There are increasing signs that the position is rapidly changing for the better, in several directions.²⁸ The finishing departments, being usually later additions, have a significantly higher proportion of university graduates (in Chemistry and Chemical Technology) than is employed in other departments. The standards of admission to various institutes have also become stricter, as seats available are now only a fraction of the number of applicants. Moreover, as competition within the technical cadre has become more intense, the incentive to give of one's best has grown in importance.

In the field of textile technology proper, the institution in 1946 of a graduate degree in Bombay requiring a higher level of qualifications for admission, and a lengthier, and harder syllabus to fulfil, is significant. The earlier educational progress made by the mechanical, electrical, and civil engineering professions has, also, benefited the industry.

The position of the entire field of technical education in India may be yet summed up in the following words : we produce technicians, but not technologists. We have the men who can apply, but not yet the men who invent and innovate.

5. The Managerial Cadre.—The functions of persons designated as managers in the mills of India vary although they invariably include

26. The Chief Engineer of a big cotton mill in Ahmedabad had this to say on the point : Unlike today when the best students are queuing for scarce admissions to Engineering colleges, his family decided to send him to an Engineering Institute because of their feeling that he would have never passed the Matriculation examination, and in the hope that the manual work of the engineer's profession would suit his duller intellect better. Undoubtedly this is an extreme case, but it is suggestive.
27. The broad generality of the propositions made here is not in disregard of the high attainments of many of this type of technicians. It is only fair to indicate that though their superiority over their former compeers is not denied, some major avenues of progress remained largely untouched.
28. A greater proportion of the non-Indian technicians now employed are men of superior or/and specialised qualifications. In the case of new appointees in Indian-owned mills, this proportion is even greater.

internal administration. The present study attempts only a survey on lines parallel to the preceding section dealing with the technical personnel.

Racial and communal affinities, similar to those obtaining in the case of technical personnel, were marked in the mill industry till the end of the last century. But these jobs, the tiniest fraction of responsible posts in Indian mills, have always been, in view of the great responsibility and the higher remuneration involved, decided more upon detailed, personal judgment of the millowners or managing agents than was the case with recruitment to the technical and supervisory cadres. So cases of mills owned by non-Indians being managed by Indians and vice versa have existed from the earliest periods in the history of cotton mills.²⁹ The later proportionate decline of non-Indians in numbers has been the least drastic in the managerial cadre.

The earliest appointees to the managerial cadre were usually technicians to start with, and in many cases they exercised the functions of technical departmental heads, while discharging the managerial duties. Many of them rose from these positions to directorial offices or became managing agents, although usually not in the same firm where they had served as managers.³⁰

With the spread of formal technical education, and more important, with the creation of a class of experienced technicians, the early scarcity of managerial talent disappeared and the premiums that were commanded as a consequence of that dearth were drastically reduced. The gradually gathering experience and knowledge of the management of technical aspects on the part of the majority of managing agents, made mills intelligible to them as technical propositions, for the first time. The schism that had grown between the two aspects of mill management—financial and production—was bridged, however tenuously. And, for the first time, the first decade or two of the twentieth century saw the majority of managing agents, other than the class of managing agents who had risen from the managerial ranks, assume final and complete control over the affairs of mills, to the general detriment of managerial powers.³¹

29. Buchanan D. H., *The Development of Capitalistic Enterprise in India*, p. 211, cites an early instance of mills belonging to Europeans being managed by Parsis. Today two Bombay mills New City and New Great Eastern under the managing agency firm of W. H. Brady & Co., are in a more or less similar position; so too, are the mills managed by James Finlay & Co. Ltd. It is not presently possible to find, however, a single Indian-owned firm having a predominantly non-Indian staffing.

30. Nowrosjee Wadia, Sir Bezantji Mehta, Sir Sorabji Mehta, Hugh Maxwell, W. H. Brady, H. Bradbury, J. Greaves, P. N. Mehta, S. J. Bose, and over a dozen others are the successful examples in point. Only two of these names, the last in the order, belong to the last two decades, however.

31. The delayed wider distribution of technical information and knowledge enabling a better control of internal organisation is one of the main factors

The essential simplicity of the principles of cotton mill operation was soon firmly grasped by most managing agents who cared to learn. This fact enabled them, supported by their superior and proprietorial positions, facilitated by the transition occurring in the racial composition of the technical cadre, and aided by the growth of new units without any traditional organisational biases, to become all-powerful within the factory. The smaller scale of less diversified operation of the up-country units, and their reliance on cheap labour costs as the main factor in achieving competitive efficacy enabled mills in Ahmedabad and other centres, but excluding Bombay, to turn the manager, especially when he was not a technician, into a glorified head clerk during the inter-war period. In the biggest mills and in mills in Bombay city, the larger volume of work and the complexity of new problems of labour deployment and mechanisation, set the lower limit to the effects of any such tendency. In several cases, the last mentioned tendencies actually operated to widen the sphere of managerial powers and responsibilities.

As a result of the operation of these diverse tendencies the designation 'manager' had, in 1939, a variety of widely differing connotations. In a substantial sector of the industry, more particularly in Ahmedabad and other mofussil centres of Bombay Presidency, the main reason for the use of the designation was the provisions of the Factories Act, 1934,³² requiring a manager to be appointed. In these cases, one of the technical departmental heads was so appointed, but had no other managerial functions at all. In another equally important sector, this category of mills cutting across the former, the manager was a confidant on the spot of the managing agent, not charged directly with production control, but enjoined to keep an eye on the working of the mill and to supply the managing agents with a reliable version of internal mill affairs. In the rest of the industry, comprising the biggest concerns, Bombay mills, and the class of mills growing at a rate substantially higher than other sectors of the industry, the manager occupied an entirely different position.

In this third group of mills, probably close to one-half of the entire industry in terms of equipment and value of production, the manager managed. He was usually in direct and final control of the internal affairs of the mill; he arranged the details of the production schedule, given production requirements; the technical heads were responsible to him in the first instance, although he did not appoint or dismiss them; the powers of appointment and discharge in relation to other members of the technical and supervisory cadre were larger, although not final; he acted as the liaison between the managing agents and the technical

responsible for the failure to rationalise management continuously and adequately in all its aspects.

32. Sections 60 & 75. See Trivedi H. M., *Labour and Factory Legislation in India*, pp. 75 *et seq.*

and other members of the non-worker group of employees. In respect of workers, his powers of dismissal were the widest and usually, final. In many routine and purely technical matters, he represented the mill company. He co-ordinated the entire internal working of the mill. His position of this character and responsibility, buttressed by the highest level of salaried remuneration within the mill hierarchy, normally secured to him several advisory functions in other matters pertaining to the mill.

This represents, broadly speaking, the normal position of this class of managers, or others who perform similar functions but under other less frequently used designations.³³ Personal connections with the managing agents developed during a long period of service, extraordinary abilities, experience, or qualifications, emergencies, structural aspects of the firm (whether a big combine with activities spread over many centres as is the case with the Madura Mills Co. Ltd., or a number of firms conglomerating under a loose familial, but not personal identity of managing agency control, to cite an illustration that frequently occurs in Ahmedabad, and a variety of other human situations that may not be easily codified), act as additive variants to the collection of managerial powers and duties. The biggest firms represent, on the whole, not only the highest stage in the decentralisation of management functions below the managing agent's level, but may employ salaried officials to perform duties which in smaller concerns would devolve upon the managing agent himself.

The distinction between the technician who is a manager and the manager who has no formal technical training is of real importance in this connection. The former has the advantage of having specialised training and experience in one branch of the industry and a fair amount of conversance with the technical details of other departments, a possible better understanding of technical problems and needs and therefore, their speedier and superior handling. The manager without formal technical training rests his claims upon other bases : management of a complex industry calls for the capacity to handle men and their problems, the ability to co-ordinate a large number of human beings into purposeful, common activity ; and, that in the everwidening complex of managerial functions a quick grasp of new developments, and the capacity and the willingness to control and analyse, rather than a detailed knowledge of machine settings, or of departmental routine is required. He also claims that technical knowledge and experience are increasingly becoming fields of specialisation, and to attribute to a spin-

33. Superintendent, Comptroller, Chief Officer, General Manager, are designations usually indicating a greater number of functions than enumerated above. Also present, and very slowly becoming more important with Indian-owned mills and almost universally prevalent in mills under non-Indian control is the directorial position with a salary remuneration.

ning master detailed knowledge or better understanding of the problems of weaving, or of dyeing, or of mercerising is not proper. In the light of these considerations, it is argued, that the non-technician (who it may be noted is not usually an ignoramus in technical matters, especially when backed by a sound education in the fields of commerce, law, accountancy, or economics), makes a far superior manager.

Any detailed balancing of these views is unnecessary apart from noting the existence of these types of mental attitudes, for it must be obvious that the efficacy of a manager is essentially the result of a conglomeration of the rarer human qualities of leadership to attain a defined goal, in the most suitable way, in the shortest time. It must also be appreciated that the difference between good and bad management may only consist in a lower or higher proportion of wrong decisions. It is, therefore, conceivable that other things being equal, and they are rarely so, in certain managerial situations one type may be superior to the other. Indeed, it is not altogether rare to come across the co-existence of both types when the size of the concern and its requirements warrant.³⁴ We may also note that most technician-managers have very few occasions on which to make use of their technical prowess, which in many cases, boils down to a memory from the past.

More significant from our point of view is the slow but growing ascendancy of the non-technician type of managers all over the country. Figures are difficult to produce in support of this statement, but in almost every centre visited by the writer, this tendency has come to the forefront, and he has ascertained of its existence in most other centres. It may be noted that the progress of the latter type has been, to some extent, also coincident with the entry of men with a university background.

The present position may be summed up as follows : a variety of factors, structural as well as others, are tending to make management, whether undertaken by men with formal technical training or practical experience or by others without the former type of training a full-time, distinct function, carried out by men who stand at the top of the mill hierarchy in terms of status and remuneration. The scope and complexity of managerial functions are widening, and have contributed to bringing about the above position. Not all mill companies have the wider concept of the term 'manager' although the newer influences are being felt in them as well.

Size of the firm and regional influences, two major variables often cutting across each other, create tremendous diversities of pattern, which qualify most generalisations about the managerial cadre.

34. For example, the Delhi Cloth Mills, or the Calico Mills.

6. **The Utilisation of Specialists.**—In the light of what has been said in the immediately preceding sections, a natural conclusion in the matter of employing specialists other than technicians follows. Their uses and numbers were very limited and that too usually only in a professional capacity, until recently. Amongst these have been architects and civil engineers, professional accountants, lawyers and solicitors, and these almost exhaust the early list. Another source of specialist services has been becoming more important, and had at least limited prevalence during every phase of mill growth—the advice rendered by technical experts attached to manufacturers and suppliers of various articles and machinery. In the matter of chemicals and dyes, expert advice as well as laboratory facilities have been available to some extent. In the case of machinery, erection has often been undertaken, under the supervision of experts attached to suppliers or importing firms. But in its very nature, this facility has well-understood limitations in respect of the unbiased character of the advice or instructions.

Recent trends indicate a wider use of some types of employee specialists and a greater desire to try out several others. The first category includes trained accountants, chemists, and statisticians³⁵ who can initiate and work schemes of quality control.

Two or three new trends are visible in the utilisation of non-employee specialists, apart from a more regular and keener use of the types that were availed of even during the earlier phases. Management consultants have had a few assignments from the industry including, it is believed, a study of workload assessments for the Millowners' Associations of Bombay and Ahmedabad. Analytical laboratories, both private and institutional, now established in Bombay City and Calcutta in the case of private laboratories, are increasingly finding mills among their clientele. Research institutions interested mainly in a corporate approach on behalf of the respective regional group of member mills to problems of application have already been mooted in Ahmedabad, Coimbatore, and Bombay. The first of these has already overcome teething troubles, and while widespread practical results may yet take time to flow, it has brought a consciousness of a variety of tools of rational management, not dependent upon rules of the thumb. The employment of statisticians (mentioned in the last footnote) may be directly traced to the influence of the Ahmedabad Textile Industry's Research Association.³⁶ Finally, flying visits by experts in various branches—personnel management, statistical quality control, industrial psychology,

35. It is believed that nearly a dozen mills in Ahmedabad now have such men on their staff. An equal number is also probably employed in other mills in the country.

36. The earliest appointment of statisticians in the industry dates back, at least, to pre-war days. This, for instance, is the case with the Calico Mills of Ahmedabad.

and so on,—are now more frequent, and not as ignored as was the case in the past.

It is, however, a very fair, broad proposition to make, that the specialists and their utility are not much understood in the cotton mill industry, even where they are employed.³⁷ And, the present interest in them, frequently represents only a search for profit-minting miracles. This phase is, of course, not peculiar to India,³⁸ but it is bound to lead to disappointment.

7. **The Jobber** ³⁹.—The jobber is, in many respects, a unique feature of the organisational set-up of Indian industry, although in respect of most of his functions he is, under one designation or the other, present and necessary in any industrial set-up. Any analysis of his role in the functioning of Indian mills should take into account the historical circumstances that abetted the growth of certain features of his usually condemned activities, the alien composition of early managerial and technical personnel, the general immaturity of early entrepreneurial skill, and to a small extent, the existence of a rigid caste structure which introduced within the industry several milder forms of seclusion and exclusiveness.

Despite the difficulties of establishing the historical continuity of the evolution of the jobber system, the following propositions are tenable. The early problems of the industry in terms of efficient technical management, from the angle of labour were (1) the unavailability of a sustained, regular source of labour and (2) the induction of these new recruits to the duties of working at machines, which though only crude and simple in character, were utterly unknown to them. The latter task was not very difficult of solution because the bulk of the jobs was unskilled ⁴⁰ and in centres like Bombay other types of economic activity had already brought into existence a class of non-industrial workers,

37. Even where utilised, specialists fail to yield a desirable level of results, if the employer is unwilling to make the entire sequence of variations following upon the expert's findings. In a bigger mill of India, a pilot plant exists which enables samples of cotton to be processed, and detailed data gathered on various spinning characteristics and results. The original manual methods of drawing out staple, and estimating spinnability and the range thereof, it has been conclusively proved, have been yielding a far greater range of variations than does the pilot plant. This reflection on their expert buying of cotton, of course, does not please the older, well-renowned and entrenched buyers of cotton for the mill who regard these tests as 'bookish' stuff. As a result, the mill instead of buying cotton as per requirements, only adjusts the cotton bought, to its proper technical performance.

38. See Knowles and Thompson, *Production Control*, pp. 3-4 for the American experience.

39. The other designations used, maistrics, naikins, etc., have not been used in parentheses but, the analysis, of course, applies to them.

40. According to the relatively low standards of classification adopted in the 1911 Census, of 295,000 workers in the cotton textile industry, 167,000 were skilled workers and 128,000 (i.e. 43%) were unskilled. (Figures from *Statistics of British India*, Vol. I, 1918, p. 5.)

but only required an intermediary to establish contact with these groups, socially and culturally different as they were from the class of owners or those who comprised the technical cadre. Their introduction to the mechanical aspects was perhaps more laborious (though not surprisingly after what we have already known of our early technicians), and needed a modicum of smattering acquaintance on the part of the would-be intermediaries with the English language so as to establish some elementary communication with the British element. There is, therefore, reason to believe that early jobbers had to satisfy one of these two requirements : either they were interpreters, or they were intermediaries enabling regularity in the supply of labour. The former group usually did not come from the same social strata as the bulk of the labouring classes.⁴¹ While the latter were the more prominent element amongst these groups, it is doubtful whether any of these requirements laid any significant stress on the mechanical knowledge required, or the leadership qualities deemed necessary in junior foremen, as the first line of management which met more workers more directly, and more often than other ranks of management did. Indeed, it is uncertain, whether in the early stages the group of labour intermediaries were very directly concerned with the production aspects, as they are today,⁴² and whether they may, in that phase, be significantly regarded as the first line of management representatives.

The growth of the Indian share in the ranks of technicians and probably the bilingual⁴³ influences of metropolitan existence on the occupants of these positions, gradually transferred (and to some extent, eliminated) the interpretative function, from the class of jobbers to this other group, which by 1910 or so, had almost completely ousted the non-Indian from comparable positions, as was observed in a preceding section. Coincident with this phase, absorbed by the rapidly expanding

41. We have already referred to the recruitment of Parsis and others from higher castes, serving as jobbers or clerks, being the first recruits to the technical cadre. This type of early jobbers, obviously, could not have had any identity of class with, or any great capacity to function as intermediaries for securing regularity in the supply of labour.
42. The earlier growth of the spinning of coarser yarns and the smaller absolute expansion of weaving as distinct from its rate of growth would, of course, mean a greater proportion of unskilled workers than required for the later mechanical orientation of higher counts of yarn and more loomage. The general cheapness of Indian labour required greater attention to the non-employment, or speeds of machines, rather than to the under-employment of labour resources. In other words, the control of labour was then more a matter of discipline, rather than of the level of production.
43. This factor is necessarily of greater importance in the Bombay mill industry, but it may not be regarded so exclusively. The Marwari worker in Ahmedabad, some fifty years back, spoke a dialect of Gujarati that was as difficult to comprehend. Moreover, the evolution of a work force language, consisting of a small number of words, covering most of the machines and actions relating thereto, must have helped in the decline of the interpretative function. In Bombay City, to cite a few examples, blowroom is *मुल्लर*, spinning frames are *त्रासन*, and waste is *वैस* for all workers, irrespective of regional or linguistic affinities.

need of technicians⁴⁴ from new, as well as existing growing industrial units, there appears to have come about a very considerable contraction in the ranks of jobbers who performed the interpretative function, and came from social strata other than the bulk of the workers. New recruits from these higher classes increasingly sought the higher status, even at a lower remuneration, of the 'supervisor' or 'assistant'. The emphasis on formal technical training has also aided the tendency to take assistants and supervisors directly as such, during the inter-war period. The jobber system, as consisting of men from the same social class or caste as the bulk of the workers is, therefore, probably an institution that has crystallised in its more or less unadulterated form only during the first decade or two of this century.

Several other changes have also been in the making. Competition, rising labour costs (although slowly), superior entrepreneurial ability and knowledge than existed previously, and the diversification of output and equipment, have all tended to place emphasis, as early as the last decade in some cases, on aspects other than those connected with the availability and induction of the labour force. Moreover, the growth in the numbers comprising the labour force as well as a measure of stability therein were attained by 1900, and severely curtailed the original intensity of the problems of availability, regularity, and induction to mechanical processes. The growth of departments multiplied the number of jobbers, especially in the spinning frame and the weaving sections, bringing into prominence the institution of head jobbers for the co-ordination and control of jobbers, within broad departmental divisions like spinning and weaving sheds. All these were factors tending to emphasize the mechanical attainments and the production potentials of the jobber's position, at least in the case of jobbers other than head jobbers.

The establishment of a state of surplus labour was a logical sequence of the stability and growth in numbers that had already eased the rigour of the jobber's intermediary functions. And, the state of affairs at the end of the boom following the First World War was an almost dramatic announcement of the fact. Mills in Bombay City stopped making any net additions to their labour force for many years thereafter, and retrenchment became the order of the day. The conditions of effective excess of supply over demand for labour created an open invitation to graft and corruption, which previously could exploit only individual needs of the utterly ignorant, newest recruits. The

44. An indirect indication of this growth may be had for the years 1911 and 1948. In the former year, according to the Industrial Census of 1911, 13,100 men other than workers (including clerks, etc.) were employed; as per the Census of Manufactures, 1948, 39,000 were thus employed in the cotton textile industry. The figures, due to differences in classification and coverage, are only roughly comparable.

corrupt tyranny of the jobber class generally, and of the head jobber, in particular, thereafter became almost universal, undermining the very vitals of honest internal administration, not unoften the illgotten gains being shared at higher levels in the technical hierarchy. The latter practice was not, however, either common or general.

The failure to substantially reform the jobber system is one of the many great failures of industrial management in India. That isolated efforts by employers achieved the needed reforms twenty to thirty years earlier than the generality of mills in India, only underscores the gravity of the entrepreneurial lapse. Only two qualifications bringing out the difficulties in the attainment of this goal may be made. First, during the inter-war period, mills in Bombay and later in Ahmedabad, were so busy coping up with problems of foreign and internal competition, trade union activity,⁴⁵ and new legislation that to try any large-scale reforms of the jobber system would have created complications in a already grave situation. Secondly, it is also fair to admit that the less pervasive role of the jobber might have been more difficult to build up in the transitional phases of the evolution of the technical cadre itself.

The Royal Commission on Labour (1930) forcefully brought out the malpractices associated with the jobber system,⁴⁶ and recommended the creation of a body of labour officers with control of recruitment, promotion and welfare activities.⁴⁷ Its support strengthened the hands of progressive employers, and goaded State Governments into legislative, ameliorative efforts. Today, therefore, a majority of cotton mills is trying out the first appointees in most cases, and where these appointments have been made there has been a noticeable decline in the jobber's influence.⁴⁸ In other mills too, the older strength of jobber influence is a story of the past.

This brings us to the delineation of the position of the jobber in the cotton mill industry in 1952. Comprising very largely of the members of the same social strata as the majority of workers, production and maintenance of machinery have been becoming their main functions,

45. In many cases, jobbers were the main influence enabling strikes to be broken by the recruitment of new hands. These men were tough and coarse, and were the main prop of the organised goondaism that had its short-lived, major phase during the late twenties. Forming only a tiny proportion of the jobber class, their strength and influence were disproportionately great. The continuance of this class, in smaller and milder proportions, even today, may not be disputed.

46. Report, pp. 23-4.

47. *Ibid.*, pp. 24-5.

48. It is not intended to convey that the jobber-type of graft has completely died out. The desperation of needy workers still continues, and, therefore, are also present these opportunities. I have come across cases of this type, with a measure of supporting evidence, covering not merely jobbers, but a Labour Officer, and a Spinning Master as well. For details of a case involving a jobber who made common practice of lending, inside mill premises, small sums at 1 anna per Re. per month as interest, see 1950 (*J.C.R.*), p. 901.

partly because the emphasis on these has been deepening, and partly because other functions now belong to other members of the mill hierarchy. At least some of the worker's contempt of management in general, gets reflected in his attitude towards the jobber, as well. The higher level of educational attainments, general and technical, insisted upon for new recruitment to the supervisory and technical cadres makes it almost impossible for a jobber to rise to higher levels than the head jobber, an institution disappearing as the retirement of the older incumbents progressively thins out the ranks. On his part, apart from a very small proportion of new recruits, the inability to cope up with the faster pace of mechanical innovation, makes his tenure very insecure in the more progressive mills. His general poverty of even elementary education has induced in him a breed of ignorant conservatism. This has produced, in its turn, a very unhealthy scepticism of all technical innovations, and has slowed down the pace of emergence of new equipment patterns. His reliance on, and faith in rules of the thumb hardly understands, and misinterprets to the ranks of workers, by conduct if not precept, the intentions behind and the implications of newer methods of time-study and work-load assessment.

Another aspect of the jobber system weakens the unity of the organisational chain, in its final and very vital link downwards. Although having identical social origins, the jobber is not accepted by the workers, in the present state of their mental attitude towards employers and their representatives, as one of themselves. The creation of rival leadership positions implicit in the growth of trade union activity, in the institution of elected representatives, and the continued inability of the jobber to be on the side of the workers during any major trial of strength between the employers and the labour force, has now set the final seal of democratic disapproval on the leadership element of the jobber's position.⁴⁹ The jobber, socially stratified differently, does not however find a place in the hierarchy of technicians, and is in many significant ways treated either in the same way as the workers or at least treated differently from the former, his lower level of intellectual and academic attainments serving to differentiate him even more remarkably. The workers treat him as belonging to the camp of the employer and liable to be suspected as such, whereas his acceptance in the opposite camp is strictly limited, and of a low order. This lack of a sense of belonging weakens the faith of the management, and adds to the feelings of defiance in the worker, in relation to the jobber.⁵⁰

49. It is significant that in only one mill company did the writer come across any sizeable measure of workers' confidence in their jobbers and mucedadums, as reflected in the election by the former of the latter to various institutions in the mill. The company in point is the Delhi Cloth Mills.

50. It is not therefore surprising that jobbers also share in the more violent forms of worker defiance, which in a majority of cases takes place outside mill premises.

Finally, attention may be directed to the intrinsic lacunae in the equipment of the jobber system in their present role of junior foremen, the frontline of the managerial hierarchy, which even at its unadulterated best, it cannot avoid. The process of effective communication in the work group is a cornerstone in the development of team work. The process is complex even normally, being coloured by social factors that manifest themselves into different connotations to the same word or gesture in different groups speaking the same language in the etymological sense.⁵¹ Linguistic, regional and social variation in affinities, so characteristic of the composition of the labour force in most of the cotton mill centres, only adds to the problems of communication in the work group in India. The decline of their status and standing, and the creation of new and higher positions within and outside the mill hierarchy deprive most members of the present generation of jobbers of authority in the matter of communication in the work group. In the light of the factors mentioned earlier (the general inability of jobbers to grasp and appreciate newer work-methods and their consequent misinterpretation, more often in conduct than in precept, which have obvious retarding influences on effective communication), and the position stated above, the jobber system suffers from severe drawbacks, in the matter of achieving efficient communication with the rank and file of the work group.

Another intrinsic defect in the present state of the jobber system is its failure to function as one of the principal sources of recruiting the higher supervisory and technician staff. It is widely recognised⁵² that in the cotton textile industry there is room for more than one type of supervisors or technicians. Widespread realisation of the potentialities in this direction, in view of the present stage of jobbers and education facilities, is not near fulfilment, however.

The jobber, we may then conclude, is the weakest link in the organisational set-up of India's cotton mills.

Before we proceed to a more direct appraisal of the organisational patterns of cotton mill companies in India it may not be inadvisable to gather the main strands of our study of the major aspects of organisational evolution.

In terms of legal status incorporation is taking place at the mill and the managing agency levels. The process denotes a wider ownership of the industry, but is consistent with the co-existence of substantial

51. See Harriet O. Ranken's brilliant treatment: 'Communication in the Work Group', *Harvard Business Review*, July 1951, pp. 108 *et seq.*

52. Thus according to the Productivity Team—Cotton Spinning—in the United States "Promotion right up to the highest grades, is wide open to all who are qualified for it". (Page 16, of their Report.) In the United Kingdom under the apprentice system young boys are trained to become operatives, from where they may and do rise to the higher positions.

proprietary elements, which are usually less strong in the biggest mills, and mills in Bombay City.

The managing agent is the top executive, inside the bulk of the industry.

Apart from the rate and pattern of growth, various other factors have also aided in the process of increasing the number of comprising functions and adding to the complexity of cotton mill management. Some of the older problems have disappeared in the course of time, and reduced emphasis on others is also noticed.

In the composition of technical personnel, changes of social as well as structural character have had their delayed but vital impact. The introduction of formal technical training and the acceptance of its utility is traced. The increasing hold of the managing agent during the inter-war period over the management of technical affairs, where size of the firm and requirements of the situation favoured it, is also brought out.

The managerial function is emerging presently, after an extended process of racial alteration in staff composition, as a distinct, separate, full-time and more complex activity, to which a class of non-technicians, with a university background in many cases, is taking more quickly than technicians. Size and structure of the firm are very important variants of the compass of managerial functions.

The utilisation of specialists is very small, and not always well-understood, although some indications of wider and better use are discernible.

The historical aspects of the evolution of the jobber system, the growth of other positions of parallel and superior power and functions, the level of educational and mechanical attainments—all these have detracted from the position of authority previously belonging to the jobber. Judged by the standards of adaptability to the new phases of faster mechanical innovation, or by the capacity to achieve effective communication with the work group, the jobber system, in its present stage, reveals itself to be the weakest link in the organisational set-up of Indian mills.

B. APPRAISAL

Some elements of appraisal were more or less implicit in the preceding propositions. It now remains to crystallise the less implicit ones, and to evaluate the efficacy of the organisational set-up.

In most Indian mills a very low level of effective, co-ordinated team work obtains. The factors responsible for this state of affairs are both structural and environmental in nature. In the order of their presenta-

tion below, no suggestion of relative quantitative magnitudes is involved, the serial arrangement being merely a matter of logical facility and presentation.

Top Executive Management.—The managing agency system of top executive management in Indian-owned mills has the inhibiting effects of a rigid class structure on the initiative of the remaining constituents of the organisational hierarchy. The highest positions are restricted therein to a select class of people favoured by their proprietorial strength. The common experience of finding more than two or three persons, who may or may not belong to the same family, exercising this *proprietorial influence usually eliminates the grave dangers of hereditary management in its extreme, unadulterated form* pointed out, among others, by Dr. Lokanathan. But what it unquestionably does is to closely circumscribe the field of recruitment.

Undisputedly, the existence of a high-salaried managerial class, and the greater opportunities invariably open to extraordinary talent, are mitigating influences for the overwhelming majority of the members of the organisational hierarchy. But the real difficulty is acknowledgedly in relation to only a small number of 'key' men, who have in one-half of the mill industry to serve under superiors whose lack of adequate experience and ability to direct, create an undertone running throughout the organisation of scepticism in the abilities of and absence of respect for the managing agents. In another sizeable portion in the industry, the qualifications of the managing agents do not inspire any such impression of their incompetence, but preclude a positive respect for their competence. In the rest of the industry, the managing agent is the logical top executive by dint of sheer merit, and the problem may be reduced to very small dimensions. In the biggest concerns this feeling of want of faith may be considerably moderated in influence by a higher level of salaries, by some participation (formal or informal) in profits, by the adoption of higher designations than manager, and by respect for the personality of the incumbent which his designation may not secure to him always throughout the industry.

It may be clearly stated here that the foregoing comments are not so much against the managing agency system,⁵³ as they are a description of the consequences of the strong proprietorial element, which has hitherto been associated with out industrial growth.

53. The analogies often drawn with British and American corporate patterns to the effect that heredity in management is not an important factor therein ignore two vital aspects: one, that in the present stage of corporate management and personal laws of taxation, their small companies are as big or bigger than most of our biggest concerns. And, that many decades of high personal taxes and estate and death duties are making large personal fortunes as distinguished from corporate aggregates of wealth, more difficult to achieve and, if achieved, to maintain. Both these factors encourage the divorce of ownership and management in these countries.

Human Instability.—A number of factors aggravate the difficulties created by the presence of a large number of top executives, whose positions arise out of status rather than competitive survival. Widespread failure of managing agents to have even ordinary confidence in the ability of the men working under them, is one such result, with continual unsettling effects on the composition and stability of the officer cadre. The selection of departmental heads and other higher members of the staff is, as a result, influenced more by considerations of the company⁵⁴ with which the appointee was previously connected. Conversely, there is a failure to find and train officers of higher status from within the concern. (It may be granted that until jobbers are raised to the level where they would form a potential source of gathering departmental heads, there would be only a limited field of selection, making it inevitable that a sizeable proportion of officers be drawn from outside. But this does not appear as an insuperable obstacle to adopting a more progressive policy of staffing the higher rungs of the officer cadre.) The more prominent concerns, as a consequence, turn into involuntary employment exchanges, wasting resources and energy on trainees who are not likely to continue with them beyond a comparatively short period. The concerns receiving them suffer from getting a set of technicians or officers whose limited acquaintance with the details of their own organisation involves a period of induction while occupying key positions of responsibility. This instability is accentuated in the case of the more ambitious and able who may have as many as eight or nine such changes in twenty years or so.⁵⁵ The strain of establishing personal relationship with each new work group, the stress involved in the building up of personal loyalty to and faith in the immediate employer, and the want of continuity in internal administration are the usual outcome undermining the capacity to do team-work even in the better concerns. The arbitrary exercise of the powers of dismissal in a small number of mills in every centre (exercised also in relation to the highest members of the staff), is only a more extreme manifestation of a widely prevalent, milder, mental attitude on the part of many other managing agents.

54. Most of the mills managed by British managing agency houses, some of the biggest Indian-owned mills and a few others have this type of value with fresh recruits to the mill industry. Examples are: the Finlay & Brady groups of mills, the Kohinoor, Century, Standard & Khatau Mills in Bombay; the Calico, Arvind & Ambica Mills in Ahmedabad; and the Delhi Cloth Mills in North India.
55. The data given below relates to some outstanding examples of each type:—

<i>Designation</i>	<i>Total period of service</i>	<i>No. of Coys. changed</i>
(1) Technician Manager	21 years	6
(2) Non-technician Manager	8 years	3
(3) Chief Engineer	20 years	9
(4) Spinning Master	22 years	4
(5) Weaving Master	17 years	4

Another implication of the instability of the composition of the officer cadre lies in their inadequate command of the jobbers, who are apt to regard themselves as the permanent, and the former as the transient, unstable elements, with obvious undesirable reactions throughout the labour force.

There cannot be any doubt that the instability of the officer cadre is not entirely due to the employer. The gravity of the situation apart from the question of fixing causal responsibility, stands delineated below⁵⁶ :—

Reductions and/or Changes at the Departmental Head Level and Higher (1947 compared with 1946)

Region	No of concerns	Total No. of changes	Spinning Master	Weaving Master	Bleaching and Dyeing Master	Engineer	Secretary	Manager	Other posts
Bombay City	65	52	10	11	3	8	4	7	9
Ahmedabad	71	88	27	21	4	7	10	15	4
Rest of Bombay Presidency	58	69	18	16	2	10	7	14	2
Bengal	34	26	3	6	...	5	2	8	2
Madras Presidency	47	8	2	2	1	...	...	3	...
Uttar Pradesh	28	21	5	6	...	6	2	1	1
Central India	17	17	5	4	3	2	...	3	...
Central Provinces	11	6	2	...	...	1	...	1	2
Rajputana	9	11	2	5	...	1	...	3	...
Punjab	17	15	4	5	...	3	...	3	...

The general impression of instability in the officer cadre is analysed further in the table given below :—

				No. of Companies which had					
				no changes	1	2	3	4	5 changes
Bombay City	...	...	...	29	26	6	2	2	...
Ahmedabad	...	...	...	26	21	10	8	2	3
Rest of Bombay Presidency	...	...	...	26	12	8	8	3	1
Bengal	...	...	...	15	9	7	1	...	...
Madras Presidency	...	...	...	36	6	3	2	...	...
Uttar Pradesh	...	...	...	18	5	1	2	2	...
Central India	...	...	...	9	3	2	2	1	...
Central Provinces	...	...	...	5	6	...	...	...	...
Rajputana	...	...	...	3	2	3	1	...	...
Punjab	...	...	...	9	4	2	1	1	...

56. Worrall's *Engineering Diary* for 1946 and 1947 gives for most companies the names of their officers. Identity of name and similarity of designation is an indication of absence of change and vice versa. In a few cases a change of posts by two officers belonging to the same company was observed. Such a change has been ignored, altogether. Some incompleteness of information is inevitable and the temptation to total up the figures in each category, and to arrive at either an all-India picture or more detailed statistical measures of category-wise variations is not pursued. The equipment patterns would determine the types of posts, broadly speaking, and therefore the total of changes in two different areas may only indicate the greater or smaller number of particular posts, rather than anything else.

The aspect that ought to be emphasized the most because its effects take place at the highest, and the final co-ordinating level in the organisational hierarchy are the 58 changes in the managerial posts out of a total of 357 concerns dealt with by us. In other words, in a single year when new building activity or major managing agency transfers were less important, one-sixth of the industry reshuffled its managerial cadre. Only a fraction of the changes obviously could be accounted for by natural wastage or other factors of a like character.

The widespread failure to achieve a well-integrated policy in respect of the remuneration of the officers within a unit is another factor aggravating the friction and strain on human relations and adding to their potential for instability. The commonest experience thereof is the piecemeal, haphazard, arbitrary and momentary character of these relationships. Another symptom is the failure of many mill companies, including market leaders and the better known companies, to clarify the broadest division of functions to be performed by each department or individual, with the result that interdepartmental friction is experienced at too many and unnecessary points. Avoidance of responsibility in the event of a wrong decision, and too many claimants for the credit of a correct one are the avoidable results. In too many companies the known presence of an employee, often at a lower stage in the chain, possessing the confidence of, and charged with faithful and confidential reporting of mill affairs to the managing agents, further complicates the picture. Moreover, the elementary principle of 'line' organisation, is too frequently violated by the issuance of instructions, casual and offhand, by the managing agent.

Equipment and Allied Aspects.—The significance and extent of adoption of a particular technique or alignment of techniques is one of the determinants of technical as well as commercial efficiency. Two factors deserve mention in such an appraisal, although it must be clearly understood that the presence of one or the other of them offers no more than *prima facie* grounds for comment, and that the importance of either may easily be exaggerated.

These factors are : (a) the lack of standardisation of equipment, within a unit ; and (b) the very wide and unstable range of products (which, however, is not exclusively a function of the former), obtaining as a universal practice in Indian mills.

The Standardisation of Equipment is primarily significant in the spinning and weaving sections, and is of lesser importance in the finishing section. Uniformity in the former would usually enable a more standardised, not rapidly altering pattern of uses of the latter, but does not have as much significance because the latter is meant to provide a wider range of final products from a narrower range of base products.

Certain technical advantages, such as longer runs of utilization and economy in supervision, would undoubtedly result from standardising the use of finishing equipment but the small unit capacity of most of the machines and the needs of the market are off-setting considerations, which make them feasible for some concerns, and undesirable for others.

In the spinning sector the problem assumes a different emphasis. As pointed out by H. E. Michel,^{57 58} the indivisibility of scale of machinery in the first process in the cotton mill industry (that is, in the blowroom), lays down 10,000 spindles as the maximum utilization of the former, when judged from purely technical considerations. Moreover, the range of counts of yarn it is intended to spin substantially increases the number of spindles per blowroom line in the higher counts, and lowers it in the case of coarser yarns. The requirements of preparatory machinery also alter, in differing and opposite directions, with the counts of yarn production. Most mills are, in practice, designed not for a particular count, as much as for a range, yielding a certain average count. Furthermore, the fact is that many mills in India have grown, altered and adapted themselves during the course of time to production patterns materially different from those for which the mills were originally designed. They are also dominated by indivisibilities of scale associated with certain machines, by the various problems and adjustments effected during long years of growth, and by considerations of providing a range of counts rather than a single count of yarn as the final product.

From these it follows, as pointed out by Prof. Jewkes,⁵⁹ and is even more important in the case of the weaving sector, that the "advantages of mass production are in the cotton industry reached at a very early stage. Economy of production and an enormous variety of production are quite consistent aims". We should, therefore, be wary in treating a range of counts, or a range of cloth, *ipso facto*, as undesirable.

In the weaving sector, as already incidentally pointed out above, the technical scale of minimum operation would be tremendously lower,

57. *The Textile Industries—An Economic Analysis*, p. 93.

58. Are size and profitability related to each other? Do optimum concepts of size exist in reality? These questions have been discussed by Dr. Lokanathan & Dr. M. M. Mehta in two studies. These authors have affirmative answers to the questions, speaking broadly. Our complete disagreement with their views rests on a variety of grounds—methodological, conceptual, and more important, factual—and is presented in the chapter on Financial Aspects. A complete lack of faith in their conclusions is implicit, therefore, in the present analysis as well.

59. British Working Party, *Report on Cotton*, Prof. Jewkes' Note, p. 243. The Working Party as a whole favoured greater standardisation of output (pp. 16-19) on the basis of economies of having longer runs as a greater proportion of products consists of staples suitable for bulk production. Our stand above differs in this respect, that we are talking about standardisation of equipment, and not of output. And, the latter is only loosely correlated to the former, in the cotton mill industry.

and may consist of only a couple of looms, or even a single loom, if other factors are favourable, such as arrangements for competitive beaming and sizing facilities. The cotton textile industry of every country in the world manifests this tendency, as does our own powerloom industry. And, if this is accepted, it clearly stands out that the mere existence of looms of differing widths, or producing different types of cloth in a shed may not be matters of any disadvantage, as is often implied in the general discussions of the subject.

A considerable range of variation in equipment, judging spinning equipment in terms of the number of counts of yarn spun, and weaving equipment in terms of the widths of cloths produced (which is always a slight understatement of reed space), exists in the cotton mill industry of India.

The accompanying charts bring out these aspects of the situation by presenting the minimum and maximum counts of yarn spun and widths of cloths produced by Bombay mills.

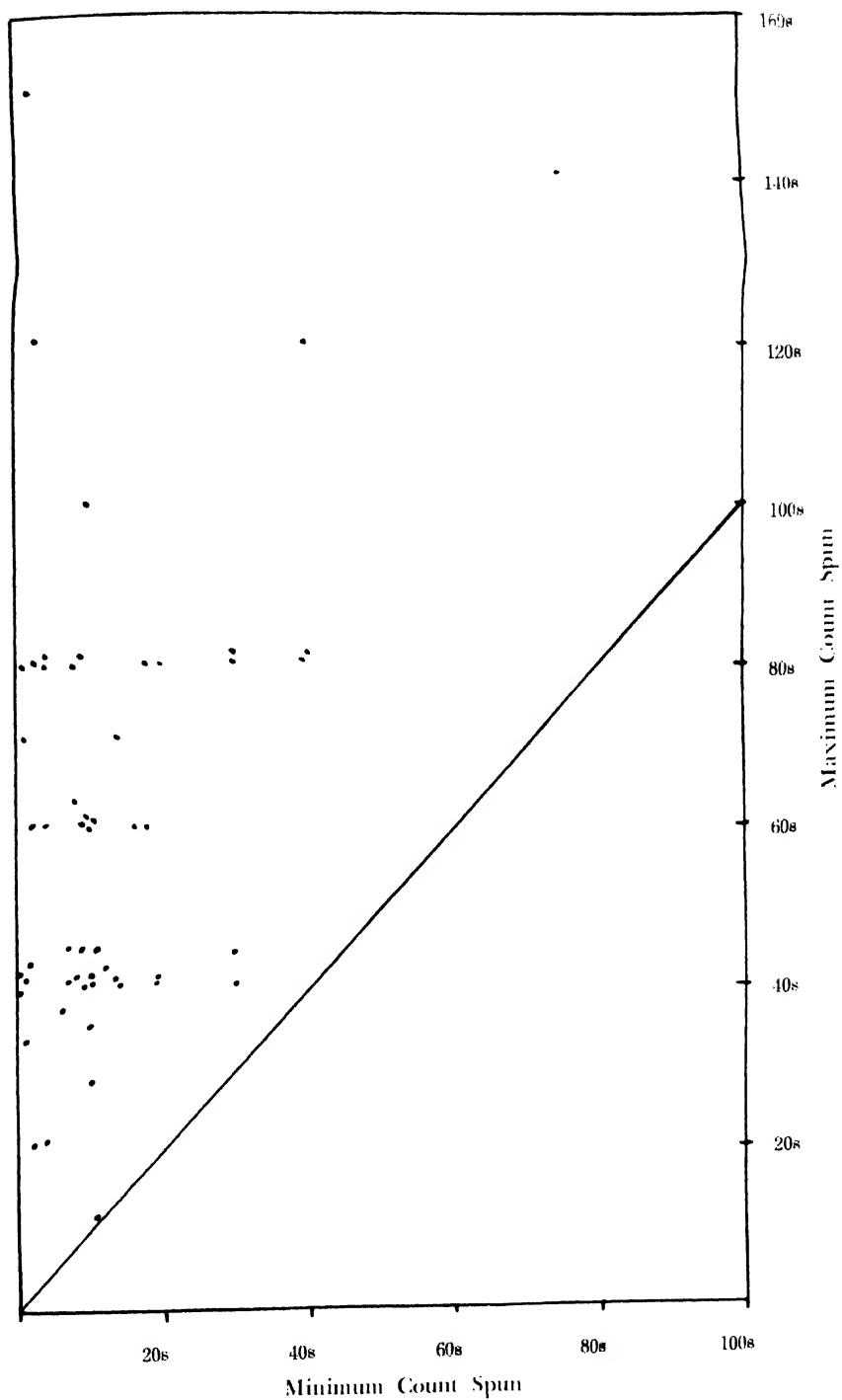
The Chart, in its 'spinning' dispersion, indicates : (a) The small number of mills, only six out of 58, spinning counts above and including 40s. Using a lower limit, 30s, we have only 10 concerns, in all. A counterpart of the above tendency is in the equally small number (7) of mills spinning exclusively below 19s. (b) A large number of mills (27) spin yarns from the coarsest, say below 20s, to the highest counts. This underscores the fact that the process of product diversification, as reflected in the production of finer yarns has been adopted by a large number of mills, and is not due to specialization by sections of the mill industry. (3) 40s, 60s, and 80s represent the modal ranges of maximum counts, 40s being the bigger category. Taken with ± 4 counts, it accounts for 21 mills. Only one observation falls on the 45 degree line which denotes specialisation on a single count, the maximum and minimum figures being identical.

The 'weaving' dispersion is (i) remarkably concentrated, judged in terms of the lower limits of cloth widths, which is not surprising since the narrow width cloth industry, unlike Japan, has not much developed in India. The maxima are widely dispersed, comparatively speaking. (ii) The fact that wider width cloths are woven in almost all mills, means an equally widespread dispersion of the capacity to manufacture dhoties, sarees, chaddars, mulls and voiles.

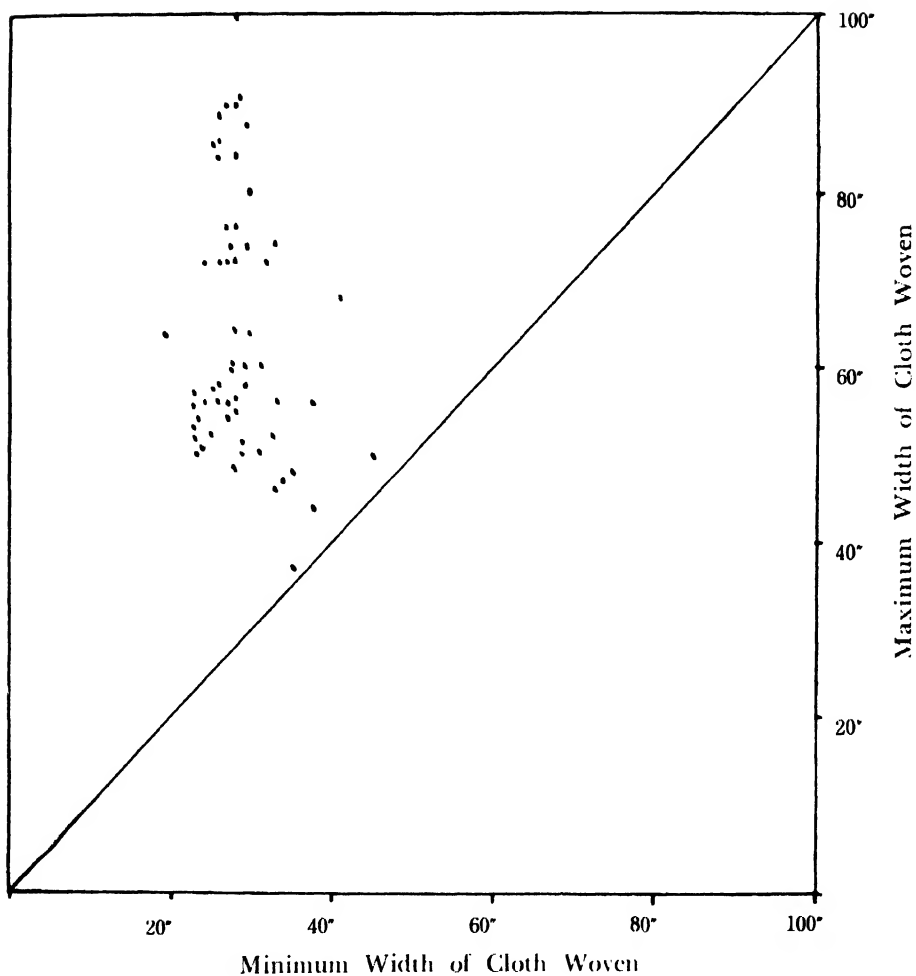
Standardisation : A different connotation.—Standardisation in equipment may be discussed from another angle, as denoting the uniformity of equipment according to (a) manufacturers, and (b) according to the capacity, size, or length of the machinery.

It is not possible to generalise easily but it would appear that variation in the latter is more common than in the former, neither being

SPINNING EQUIPMENT OF BOMBAY MILLS (1950)



WEAVING EQUIPMENT OF BOMBAY MILLS (1950)



of any consequence in at least one-half of the industry. In the rest of the industry, although the more extreme illustrations do not possibly exceed a very small fraction of the industry, a variety of types is to be frequently observed. In a Coimbatore mill, the writer counted ring frames of ten different makes installed. In a well-known mill in Ahmedabad six or seven makes were likewise installed.

The smaller parts and ancillary and auxiliary requirements of diverse makes are, however, common even with the better mills. Indeed, it is rare to come across a mill thinking in terms of simplifying requirements in this respect and thereby make the buying thereof a simpler, less frequent job, and storage easier and less complicated.

The factors responsible for this latter variety of lack of standardisation are (i) the widespread omission to establish definite standards of requirements, by laying down detailed specifications, (ii) the desire to buy stores at cheapest prices, often sacrificing in the process uniformity of quality in supplies, (iii) factors like personal relations between the supplier on the one hand, and the managing agent, manager, or departmental head, on the other, or (iv) the not infrequent prevalence of graft⁶⁰ at every rung of industrial management.

There cannot be any doubt that the factors just mentioned detract from the quality of technical as well as commercial results. It should also be obvious that an unnecessary variety of makes only makes for technical troubles, extra supervision and additional stores problems.

It is not possible to be dogmatic whether the absence of standardisation of equipment in the sense of producing only one or a few counts of yarn, or having identical reed space for the loomage, is always superior to a drastic standardisation of that type. It is clear that both can be and are, often, overdone. It follows that only a difference in degree would be an adequate criterion. In view of the complexity of market patterns, and the equipment patterns, it would be both uncertain, and changeable. The problem whether the selling of a single product involves higher skill on the part of the management, or whether the management of a range in equipment is more arduous is impossible of lasting solution in the context of Indian cotton mill history. Cotton mills in India have as yet only been a developing industry, and it is only recently that the rate of new additions has stopped to materially affect the structure of the industry. The solutions of our own problems in this direction can effectively emerge only during a phase of drastically slowed down rate of new additions to the industry, where the sequence of new variations, howsoever rapid, can be viewed in a larger, more permanent context of market needs. It is only when management skills

60. It is as easy to exaggerate its importance, as to minimise it. The present writer is convinced that it has assumed graver dimensions, and in many cases, subtler forms, in the bigger centres at any rate, than was the case in the past.

have reached a very high general level that, broad comparisons ignoring differences in technical results due to the latter, could be helpful. Therefore, apart from the possibility of extremes being dangerous, the equipment pattern may not be condemned or praised because it is not highly standardised.

Nature of Production Decisions.—The other facet of entrepreneurial behaviour, consisting in an unnecessarily wide and unstable range of products, is more amenable to precision in judgment. With it weaving mills that spin are more concerned, than the exclusively spinning industry. The discussion is, therefore, limited to the former.

The following data relates to a mill having 950 looms at work daily and reflects the common practice in the cotton mill industry.

No. of looms			No. of sorts	Warp count	No. of looms	Weft count	No. of looms
1-5	...	...	4	60s	38	60s	31
6-10	...	...	3	80s	287	80s	287
11-15	...	...	6	44s	391	100s	391
16-20	...	...	2	40s	153	44s	152
21-30	...	...	8	2/60s	82	40s	82
31-50	...	...	7				
51-70	...	...	4				
71-80	...	...	2				
950 looms			33 sorts				

The facts that a substantial proportion of Indian looms is engaged in the weaving of bordered dhoties and sarees, the more or less marked regional differentiation of markets that existed very rigourously prior to 1939, and the general tenor of quality competition of a subtle type, have all contributed to making the entrepreneur a producer of a range of fabrics rather than a few varieties thereof. The domination of the market by the trading interests to the general detriment of the bargaining power of mills, and the low labour costs have also facilitated this pattern of expansion. Most of these propositions are made and established in the chapters dealing with the various facets of the market position. Here, it is enough to stress that the forces making for the standardisation of products, and to a lesser extent, of equipment have been exceptionally weak. In the Indian market situation of pre-war days, the temptation to variegate production was unusually great, and has on more than one occasion received the accord of Tariff Boards.

It may be, however, asserted with some measure of confidence that the desire for product diversification has often had an unstabilising influence in the industry as a whole. Within a unit, this manifests itself in a rapid alteration at the loom stage (including in extreme cases

the cutting of warp yarns already beamed to a loom) of production decisions. It involves continual adjustment of the equipment and strain on the worker's skill, and the loss of the economies of full runs, whether on the preparatory machinery, on the looms, or at the finishing stage. The stoppages that must interpose between the decision to stop the production of a sort and the gaiting on of another variety make for more supervision, and make it difficult. It is not rash to suggest that most mills have not equated these cost-raising factors against the advantages supposed to result from switching production schedules according to a turn of the market. It has also resulted in most mills not having any single variety by which the consumer identifies them, and which would provide the stability to a section of their selling programme, supporting a greater variation in the rest. That probably 60 to 100 mills follow the latter practice increasingly is a significant development, and is an argument in favour of the majority of Indian mills taking all the costs as the basis of changes in production schedules, rather than judging only by price or profit differentials according to the expected final prices. The continual existence of bottlenecks thwarting production and making it inevitable to keep some machines idle for want of raw materials or supplies of ancillaries, that one comes across in a large section of Indian mills, issues in no small measure from their unstable production schedules. The widespread failure to crystallize the functional pattern leads to decisions affecting production arrangements being made at a variety of hierarchical levels ranging from the managing agent to the salesman, and being conveyed in an equally confused pattern of instructions to the departments concerned.

In fine, the usual multi-sort production schedules of a vast majority of Indian mills are liable to rapid and arbitrary alterations, not unoften made through an equally unclear chain of organisational authority. The absence of detailed costing data, and the very limited recognition of the utility of work-load assessments, have only served to make the production schedule a matter of necessarily arbitrary personal judgments of costs. It also means that problems of production control, already complex in view of the multi-sort character of the production schedule, are aggravated.

Abdication of Management Functions.—A comment that is becoming less accurate, because it is losing the edge of extreme gravity it once possessed, and because wider prevalence is rapidly narrowing, may be made. That is, the tendency to abdicate essentially managerial functions in favour of others, within or outside the mill hierarchy. The first set of such functions obviously includes the use of contractors for supplying labour even in regularly worked departments, and the role which jobbers have assumed in regard to the recruitment and the control

of labour. Of a similar type is the tendency to operate grain shops or canteens on a contract basis.

Another set of functions includes the extent to which the industry, by employing selling agents and others, has become divorced from the *sale of its own products*. *Disposal of waste cottons, often without suitable classification, provides another but less pervasive example.*

Some Other Drawbacks.—We have been hitherto judging the organisational set-up by what it does, and how efficiently it does it. It may not be inadvisable now to talk in terms of a failure to do things altogether in the proper perspective. None of the propositions to be enumerated may be regarded as capable of drastic generalisation, although of their representative character, the writer is convinced.

(a) The reporting of accidents is a legislative requirement, as is compensation for them. The very high incidence of accidents in the mill industry, their unequal incidence in different shifts, their causes and costs are matters almost never taken up at higher levels. Their tremendous costs are looked at mostly from the angle of workmen's compensation actuals or/and premiums, while their greater indirect cost-raising effects are not even estimated. The efforts to mitigate these are not, as a rule, likely to exceed the demands of the factory inspectorate, or the letter of the law.

(b) Standing out, implicitly or explicitly, in the discussion of any aspect of the cotton mill industry is the labour position. But even where more elaborate labour records do exist, their use beyond routine purposes is limited. As a result, the factual basis for the formulation of a well-defined, clear, and rational labour policy is confined exclusively to transient, personal impressions and opinions. The general instability of the officer cadre only adds to the discontinuity of approach to all problems of internal discipline and labour management. The appointment of labour officers is an advance but has not yet developed into a superior conception of policy in labour matters.

An equally ineffectual mental attitude obtains in relation to labour welfare work. It has a narrow, limited scope, and is motivated by either of two considerations, philanthropy or the provision of legal or conventional minimum requirements. The former has often no place in efficient management, and may, in many cases, amount to the managing agent acquiring prestige at the cost of the shareholders. Both, however, as applied inside cotton mills, are inefficient tools of labour policy and management. The implications are better stated in terms of illustrations :

- (1) A leading mill company, employing nearly 4,000 workers, has a canteen which serves tea among other articles to its workers at specified times, inside the departments. Tea

almost never arrives at the appointed times, due to a series of avoidable reasons, and continually varies in quality in spite of having a formula for making it. The delay and variation in quality are irritants, arouse caustic comments and frequent complaints. The tea vendor, having only a basket and cups brought in by him manually, and not on a trolley, sits in one corner of the particular room, instead of moving around the department. Thus, his presence inside the department is a signal for permitted small-scale migrations in his direction, and away from the machines. The canteen, which could have otherwise acted in the direction of removing excuses for loitering away from the machines, and providing at proper times the specific needs of workers as human beings, not only fails to serve as a positive management tool to achieve higher efficiency and better labour utilisation, but also fails as a mere welfare measure.

- (2) Another leading company has a programme capable of yielding substantial results, but which does not adequately do so, because the management has never conceived of it as a tool to achieve higher efficiency. The management is willing to supply pairs of spectacles to those of its operative employees who are deemed to need them, after preliminary testing by the mill's medical staff, and as prescribed by an eye specialist with whom they have made arrangements. The application for this purpose must be made by the person wishing to avail of this facility. They distribute upto fifty pairs a month, mainly to workers in the weaving, drawing-in, and warping departments. This programme is obviously doing some good to the company, by reducing the number of 'eye' slips. Strangely enough, however, the idea of making a thorough, comprehensive survey of the state of eye health, and adjusting the programme to the needs, looked at from the point of view of departments wherein the state of health of eyes and the efficiency of work have direct relation, and individual cases of grave condition, has never been thought of.

In other words, although the industry as a whole spends from 200 to 300 lakh rupees every year on welfare work indirectly as well as directly, and a gross expenditure that is substantially larger, it has, by and large, failed to maximize the results. The fact that more mills have thought of building glittering dining sheds or of purchasing X-Ray equipment, than of more urgent and more productive programmes like the second of our two illustrations above, is significant.

(c) The non-technical sections of mill organisation leave much to be desired. The recruitment, especially at clerical and other grades, is

haphazard, not based on any specification of qualifications, and dominated by arbitrary and personal considerations. Their work and efficiency are almost never assessed, except by reference to personal judgments and prejudices, and the failure to adopt a cost-conscious approach to them is very widespread. Managements stingy with their non-factory payroll are frequently to be found, of course. But they probably are among the factories having the highest real costs for this type of activity.

(d) The virtues of shrewdness and the utility of experience in forming judgments have been dragged to the limits of a vice in the cotton mill industry. Not more than a score of Indian mill companies have a full-fledged costing department, capable of supplying truly reliable cost information, which can form an adequate basis for various decisions. In the rest of the mills, costings are based more on rules of the thumb, and *a priori* judgments of mill agents and salesmen as to the proper interpretation of the financial data. It is idle to contend that any substantial proportion of managing agents has the genius to comprehend the huge mass of statistical information available as a result of the adoption of a sound cost accounting system, without the rigour and clarity of presentation than can only be associated with the latter. Most managing agents' knowledge of cost relations would appear to be confined to a few clichés, and a score of odd figures picked up during a long period of years, and their staffs do not fare any better.

C. SUMMING UP

The cotton mill industry, viewed from the point of view of its organisational set-up, presents a picture that is clear in its broader outline, although the latter may not be recognised as final, or well shaped in every respect. Variation in detail, and not infrequently in the more important boundary lines, is a result, partly of historical influences, and partly of structural and personal equations.

The most significant trends in the patterns of management and organisation are summed up below :—

- (1) The proprietorial element is a fundamental determinant of the composition of top executive management. It sponsors heredity in management at the highest levels, and circumscribes the field of recruitment to a small, essentially non-competitive group.
- (2) The managerial function is becoming increasingly important as a distinct, full-time responsibility at the highest level of salary remuneration, drawing non-technicians to the fold of managers, supported in many cases by a background of university education.

- (3) The nature of functions involved in the administration of a mill is becoming complex while the scope is widening, bringing into existence newer designations in the mill hierarchy ; and requires newer, and in some cases, highly specialised skills.
- (4) In the case of technicians there has been a continual raising of the minimum standards of new recruitment, a fact which has already had important consequences for various aspects of mill management.
- (5) The jobber is being continually deprived of his functions other than production control and maintenance of machinery, but only insignificant, isolated attention has been paid to his capacity to effectively discharge the latter functions.
- (6) The absence of human stability in the salaried hierarchy above the level of the jobber, is more marked at the officer or departmental head level. Taken together with several other causes of varying importance, there is only inadequate realisation of effective team-work.
- (7) The industry has not fully appreciated and often ignored the consequences of such failure. This is also true of the realisation of the economies of continuity of operation.
- (8) In bringing about the latter, the general failure to evolve a substantial factual base of cost records is important, although the gap is not exhausted by cost accountancy.
- (9) Several problems have not received any or adequate attention and organisational action.
- (10) Finally, the industry has materially failed to realise the efficiency potentials of labour welfare programmes.

The betterment in the quality of personnel is an indication of progress, and more important, of the capacity to continue to progress. The failure to maximise gains and pursue keenly every avenue of efficiency is partly revealing of the magnitude of the ground to be covered, and partly of want of initiative and imagination.

CHAPTER IV

THE HANDLOOMS : A RE-APPRAISAL

Any discussion of the handloom industry is complicated by the absence of reliable factual information on most aspects and the tendency to colour estimates according to the purpose the estimator has in view. To some extent, more precise information is now available, and our endeavour should be to analyse the problem objectively, without being swayed by sentimentality. The first step in such an analysis must be to examine the reliability of the facts put forth by the Fact-Finding Committee (1940-42), the assumptions underlying their conclusions, and the adequacy or otherwise of their view of the problem. While discussing the Report of the Fact-Finding Committee (hereinafter called the FFC), it would be equally interesting to examine other view-points on the questions involved that have been expressed from time to time. We follow up this discussion, by a restatement of the position of the handlooms setting out our view of what constitutes the fundamental problems of the industry.

A. EXAMINATION (MAINLY) OF THE VIEWS OF THE FACT-FINDING COMMITTEE

Yarn Supply.—The quantitative determination of the yarn consumption of the handlooms has been attempted frequently,¹ the earliest attempts dating back to the last century. Almost every important estimate has followed, as has the Fact-Finding Committee, the 'residual' method by which is meant :

- (1) Internal production in million lbs.
 - (2) Less exports of Indian Yarn.
 - (3) Plus net imports of yarn.
 - (4) The resulting balance ($1 - 2 + 3$).
 - (5) Yarn consumed by mills in their own weaving sheds is subtracted from (4), to yield
 - (6) Yarn available for non-mill uses within the country.
1. The most important of these are:
- (a) R. D. Bell, *Notes on Indian Textile Industry with Special Reference to Handweaving*.
 - (b) The Indian Tariff Boards of 1926 and 1932.
 - (c) The Indian Industrial Commission, 1918.
 - (d) *The Indian Trade Journal*.
 - (e) The Millowners' Association, Bombay, in continuation of the figures first published in the *Indian Trade Journal*, still publishes these figures annually.

The figure arrived at as (4) is reliable, and involves no guesswork at all, for the various official publications give each figure separately. As regards (5), the only information available until recently was the weight in pounds of cloth and other fabrics produced inside mills. The only method of converting the weight of the cloth into yarn was the application of some arbitrary ratio of cloth weight : yarn weight. A *a priori* judgment in 1906-07 of the ratio put it at 112 lbs. of cloth = 100 lbs. of yarn, the excess of the weight of the cloth being due to the size or starch applied to the fabric. The assumptions underlying and the limitations of this ratio, or any level of it have not been always adequately appreciated. They are : (1) that out of a given quantity of yarn, say 10 lbs., only less than 10 lbs. of grey cloth may be woven, for the processes after spinning, namely, winding, warping, sizing, and weaving, involve some wastage of yarn ; although the extra starch may be put in at the sizing stage, it is usually put in only after the cloth is ready. There is reason to believe that the wastage of yarn is greater as the quality of yarn ascends into higher count-ranges. (2) Even the small addition of starch when sizing the yarns, would disappear, if the finishing processes involved bleaching or dyeing. (3) Most better cloths are not normally sized heavily, except by a small (2 to 3%) amount for presenting a crisp appearance at the time of consumer purchase.

In other words, the continued application of the ratio of 112 lbs. of cloth : 100 lbs. of yarn, as has been done by the FFC,² implies a continuation of the earlier pattern of cloth production, during the three or four decades that followed the first adoption of the ratio. Such a ratio (or, the new ratio adopted by the FFC from 1931-32 onwards, 100 lbs. of yarn = 110 lbs. of cloth³) implies that the vastly different patterns of yarn production and cloth production made no difference to the size or starch added, or required to be added. It ignores the spread of the laundering habit,⁴ and it also brushes aside the fact that Ahmedabad, which specialised in this type of goods, had almost completely lost this trade, by 1932 or so.⁵ It totally avoids taking into account the huge development of bleaching and dyeing sections inside the cotton mills of India, brought out in the chapter on Equipment Patterns.

The more recent factual data correlating yarn consumption and cloth production in terms of weight is submitted below to bring out the extent of over-estimation that exists in the FFC estimates of yarn supply available to the non-mill sector.

2. Appendix XV, p. 283, of the Report.

3. *Ibid.*, pp. 283 and 290.

4. *Ibid.*

5. Kasturbhai Lalbhai, the prominent Millowner of Ahmedabad, in his evidence before the Indian Tariff Board of 1932.

—			Yarn Consumed	Cloth Produced	Percentage Difference
Superfine Cloth	...	...	100 lbs.	95.0 lbs.	5%
Fine Cloth	...	...	100 lbs.	96.0 lbs.	4%
Medium Cloth	...	...	100 lbs.	97.0 lbs.	3%
Coarse Cloth	...	...	100 lbs.	98.5 lbs.	1.5%

It is then clear that the faster growth of the production of the three higher varieties of cloth, brought out in another chapter, invests the FFC estimates with a very considerable bias towards over-estimation, especially after the end of the First World War, and there is a widening divergence between the FFC's position, and the realities. It is, as a converse, probable that the further we move away from recent times, the greater is the reliability of the FFC estimates, provided the ratio of 100 lbs. of yarn = 112 lbs. of cloth was really representative of the situation at the time of its first adoption. On the latter point, no quantitative check is feasible, but its early adoption probably had some factual representativeness, inasmuch as it is known that at one stage Ahmedabad had a well-developed, extensive trade in heavily-sized piecegoods, along with other centres.

Going by the general tenor of reasoning suggested by our own analysis of the growth of bleaching and dyeing capacity in Indian mills, and the clear evidence of the recent factual data, it is suggested that the ratio adopted should drop gradually over the inter-war period to 100 lbs. of yarn = an equal number of pounds of cloth. The rate of fall would obviously accelerate as we approach the decade preceding the Second World War. Our basis of estimates obviously does not easily settle to presentation in a regular time series. So, we present the yarn situation below, for six trienniums spanning in the aggregate nearly 55 years, the first five being based on certain 'ratio' assumptions placed in parentheses, the last triennium alone being actuals, as *approximations to indicate broad trends only* :

Triennium (Annual Average)		Yarn available for consumption in India	Yarn consumed by Mills	Ratio of conversion applied
1.	1896-97 to 1898-99	340 m. lbs.	82 m. lbs.	100 lbs. of yarn = 112 lbs. of cloth
2.	1906-07 to 1908-09	444	162 m. lbs.	do.
3.	1916-17 to 1918-19	532	338 m. lbs.	100 lbs. of yarn = 108 lbs. of cloth
4.	1926-27 to 1928-29	760	483 m. lbs.	100 lbs. of yarn = 105 lbs. of cloth
5.	1936-37 to 1938-39	1,171	835 m. lbs.	100 lbs. of yarn = 100 lbs. of cloth
6.	1948 to 1950	1,300	960 m. lbs.	Actuals

It may be borne in mind that for the fifth triennium, we are using a ratio wherein yarn yields its weight equivalent of cloth, and not the present relation of actual position. So, it is not improbable that we are understating mill consumption of yarn by 2 to 3%, i.e. 16 to 25 million lbs.

The difference between the FFC estimates, and our calculations is nil in the first two trienniums, and as follows, for later trienniums excluding the last triennium :

Yarn Consumption by Mills (in million lbs.)

—				FFC Estimates	Our Calculations	Difference
1916-17 to 1918-19	...	...	...	328	338	-10
1926-27 to 1928-29	...	...	...	453	483	-30
1936-37 to 1938-39	...	...	...	759	835	-76

If to the under-estimation of mills' offtake of yarn in the triennium preceding the Second World War were added 16 to 25 million lbs. of yarn wastage as suggested above, the FFC is seen under-estimating mills' consumption of yarn by as many as 90-100 million lbs. The converse of this proposition is that the quantum of yarn available for non-mill uses is lower by an equal quantity. Stated in terms of our analysis, but excluding the 16 to 25 million lbs. of yarn, we arrive at the following magnitudes of 'free' yarn—the residual quantity of yarn available to the non-mill sector, before the War of 1939-45 :

—				FFC's Estimates	Our Calculations
1.	-7 to 1898-9	...	...	258 m. lbs.	258 m. lbs.
2.	-7 to 1908-9	...	...	282	282
3.	-7 to 1918-9	...	...	203	194
4.	-7 to 1928-9	...	...	308	277
5.	-7 to 1938-9	...	...	445	336

* The figures for the first triennium were calculated from Venkataraman, K. S., *The Handloom Industry in South India, 1940*, pp. 22-3, for this as well as the preceding table. Other figures have been calculated from the FFC Report.

The obvious disparity in the FFC and our estimates gets magnified further if the quantum of yarn available for handlooms alone is considered. As the FFC⁶ pointed out for the first time, the use of yarn in the non-handloom sectors has been growing rapidly. They made

6. *Ibid.*, pp. 44 *et seq*; see also App. XVII, p. 287. It is not unlikely that these estimates are also underestimates, but they are almost the only information available, and it is felt that they are not, in any case, underestimates by more than 15%.

estimates for two groups of such uses of yarn [(1) powerlooms, hosiery, and jute mills ; and (2) fishing nets, cotton rope and twine, tape and niwar, etc., braids and sewing and darning threads], year by year, from 1900-01 to 1939-40. Accepting these figures as the base line, following the FFC, we arrive at our calculations of yarn used by these two groups and these when deducted from our calculations of 'free' yarn, yield the residual quantity of yarn available for use by handlooms :

—	'Free' Yarn— Our Calculations	Non-Handloom Uses of Yarn (FFC)	Yarn Available for Handlooms	Yarn Available for Handlooms (FFC)
1. 1896-97 to 1898-99 ...	258 m. lbs.	9* m. lbs.	249 m. lbs.	249 m. lbs.
2. 1906-07 to 1908-09 ...	282 m. lbs.	14 m. lbs.	268 m. lbs.	268 m. lbs.
3. 1916-17 to 1918-19 ...	194 m. lbs.	14 m. lbs.	180 m. lbs.	213 m. lbs.
4. 1926-27 to 1928-29 ...	277 m. lbs.	27 m. lbs.	250 m. lbs.	290 m. lbs.
5. 1936-37 to 1938-39 ...	336 m. lbs.	70 m. lbs.	266 m. lbs.	355 m. lbs.

* No FFC estimates are available for this triennium, but the average of their figures for 1900-01 to 1902-03 works out to 12 m. lbs. So our figure of 9 million lbs. is not likely to be exceptionable, except as an underestimate, which to the extent that it is an underestimation, increases the estimate of yarn available for handlooms.

Our submission, therefore, is that speaking in general terms, the handloom industry reached a state of stagnation in terms of yarn offtake, after the First World War, from which it could never recover fully. The importance of this conclusion lies in its contradistinction with other estimates of the position which have acclaimed the survival of the handloom industry and the increase in its yarn consumption in absolute terms, and adduced it as proof of its 'élan vital'.⁷ ⁸ Taking into account various factors having an under-estimating bias toward 'mill' and 'non-handloom' uses of 'free' yarn, the resulting position of handloom yarn consumption probably indicates a small, but definite decline over the position in the fourth triennium, in the succeeding triennium.

7. *Ibid.*, p. 262. The FFC disputes the contention made in the Bengal Census Report of 1931, that handlooms were a 'decaying' industry. Venkatraman, K. S. op. cit., the Chapter entitled 'The Handloom still survives', p. 28 *et seq.*
8. It is often argued that the continued existence of a substantial handloom industry, despite the growth of the mill industry, is a sign of the strength to survive of handlooms. We deal with the larger question of survival later, and in the body of the book. The former is not a tenable suggestion, however. When in any large country with India's population, a new industry starts to exist, it only gradually reaches the stage where it can satisfy all of the requirements. Until the final position is reached, how can the older industry, operating manually, substantially wither away? It is wrong to regard India's experience of the continued co-existence of handlooms and mills, for some decades, as unique in economic history. It happened in the United Kingdom, China, and Japan, to mention but a few examples. In China, as Dr. Fong (*Cotton Industry & Trade in China*, 1932, pp. 235-6) states such an industry existed. Dr. Orchard (*Japan's Economic Position*, pp. 96 and 185) also refers to a delayed decline in hand-weaving in Japan. In 1900, only 26,000 out of 770,000 looms in Japan were powerlooms ; in 1928, out of 370,000 looms only

Our reading of the situation saves us from the highly tenuous analogies drawn between agricultural production and the handloom industry by the FFC.⁹ The FFC contended that the handloom industry, being a hereditary occupation was analogous to agriculture, neither production nor numbers employed having much bearing on profitability. The weavers on handlooms, knowing only weaving, and being helpless in the absence of alternative occupations, it is argued by the FFC, will continue to ply the loom, "even if they barely get the price of yarn used in the making of the cloth".¹⁰ Production, as indicated by increase in yarn offtake, should not, therefore, be regarded as an indication of prosperity.

The reasoning of the FFC bristles with contradictions. The enormous increase in yarn consumption was a statistical result attained by them, by ignoring the changes that were taking place in the production in the mill sector. They were led into arguing in the above manner by their consequent, drastic over-estimation of the handloom share of 'free' yarn, and the mainstay of their reasoning is clinched there. It may, however, be pointed out that an increase or fall in production, whether in the mill or in the handloom industry, has significant and direct bearing on the profitability or otherwise of the two industries, and it did not need a Government Committee, and three years of labour and expenditure of the taxpayer's money, to tell us that prosperity and production were not synonyms.

That current costs mainly govern production decisions is as applicable to the handloom industry, as to the mill or any other industry. And, one fails to see how the independent handloom weaver, in a superior position to adjust in this matter, is behaving differently from mills, when he would produce cloth, provided at least yarn prices were recovered.

Moreover, in arriving at its generalised picture, the FFC fails to take into account the fact that the production decision is not made, for the bulk of the commercial handloom production by the weaver at all, since independent weavers are only a small proportion of the weavers.¹¹ Furthermore, it is incorrect to assume, as the FFC has done, that alter-

90,000 were handlooms. Dr. Orchard suggests a reason for the greater and quicker decline in hand-spinning as compared to hand-weaving, in terms of the greater amount of labour displacement caused by mechanical spinning as compared to mechanical weaving. Thus, 1 man looks after 200 to 300 spindles, as against only 1 or 2 looms. This is obviously an oversimplification, dramatising the proportions, but its significance may not be lost. This would mean, taking the argument a step further, that a higher level of general labour deployment inside mills, materially adds to their competitive strength as against handlooms. We are, as shown elsewhere, and have been passing through such a phase.

9. *Ibid.*, pp. 194-6.

10. *Ibid.*, p. 196.

11. *Ibid.*, p. 79. 21% of Bombay's hand-weavers, and 28% of the weavers in Madras are independent.

native occupations outside the handloom industry are a prerequisite position to be attained before handloom weavers would give up hand-weaving. This ignores two things. Firstly, the competition of mills during the thirties did not engage the handloom industry on all fronts, so that there was scope for shifting production from the types of cloth where mill competition was most severe to others where it was less severe or non-existent. In other words, more intense competition amongst handlooms would almost be a necessary prelude before any large-scale migration from hand-weaving takes place. Secondly, the non-independent section of handloom weavers, who are the majority of weavers, have no option to continue handloom weaving, if their employers, in one form or the other, decide to discontinue or reduce the volume of their employment.

There is also reason to believe that the hereditary castes of handloom weavers have not been as static in their occupational structure, as we are led to believe by the FFC.¹² Moreover, it is probable that the entry of new classes of individuals into the field of handloom weaving pointed out by the FFC,¹³ have attracted only those classes, whose earlier general level of incomes was comparatively lower than the caste-weavers. Lower income groups might have thus tended to disrupt, in an upward movement in occupational mobility, the older, higher patterns of standards of living in the weaving communities, besides leading to increased competition. To a small extent, the latter could give rise to the possibility of an 'unregulated increase of production', as alleged by the FFC, but in the light of our understanding of the total yarn situation, the argument for the country as a whole devolves to internal competitive adjustments rather than to any remarkable increase in production. The likelihood of localised manifestations of unregulated production increases, however, may not be ruled out.

Acceptance of the FFC interpretation of the yarn supply situation brings to attention their failure to appreciate one of the most significant developments in the cotton mill industry during the last fifty years—namely, the substantial, geographical shift of the production of yarn for sale (especially coarse yarn), to low-wage cost areas in the country. We have discussed the position elsewhere, but one of its consequences may be noted as being more relevant here. This shift of 'free' yarn production could not but have had a sustaining influence on the yarn supply to handlooms.

We restate the essentials of the yarn situation in the handloom industry, after completing the examination of some of the other contentious arguments of the FFC.

¹². *Ibid.*, p. 65.

¹³. *Ibid.*

Aspects Other Than the Yarn Supply to Handlooms.—The FFC's treatment of the position of the mills as yarn suppliers, its attitude towards marketing agencies and their margins of profit are presented and analysed below.

There is a multiplicity of middlemen interposing between the handloom weaver and the producers of yarn, according to the FFC.¹⁴ Their existence leads to a pyramiding of prices, and, in addition, these middlemen have exploited the poverty, helplessness and ignorance of hand-weavers, in regard to the quality, quantity and price of yarn. The speculative element 'which in its very nature is unstable', capable of distorting the price structure of yarn, is objected to by the FFC. The system of forward contracts enables the stocking of yarn in favourable seasons, and merchants may actually undersell the mills themselves in brisk seasons, thus earning higher profits. Furthermore, the FFC alleges, that a rise in the wholesale price of yarn is immediately followed by a rise in the retail price, while it takes a long time for the retail price to adjust itself to the wholesale price when it falls.

Against the mills, the FFC has three points to make :¹⁵ (1) The quality of yarn is inferior, and may be wrongly labelled, misleading the prospective buyer. (2) The mills' unwillingness to interfere with the business of their agents, and the consequent absence of positive willingness to do direct business with weavers or their societies. (3) Mills are aided, owing to the advantages of distance and the saving in freight charges, by an approximation to regional monopoly for particular mills. Where the question is of common interest, "it is not at all difficult for mills to come to some sort of tacit agreement as a matter of trade practice regarding bulk sales".

Stressing the importance of yarn costs,¹⁶ the FFC declares that the availability of cheap and plentiful yarn is a primary condition of the success of the handloom industry. But this essential condition is not fulfilled due to all the reasons cited above, and 'so long as the weaver continues to buy in the dearest (yarn) market, and sell in the cheapest (cloth) market, it is impossible to imagine that he is likely to make a decent living out of his work'.¹⁷

All these are an imposing array of statements. The FFC has often thought it fit that we inculcate faith in the infallibility of their judgments, rather than appreciate arguments, or judge the factual basis thereof. With this unavoidable gap, we may proceed to a discussion of their position.

14. *Ibid.*, p. 86 *et seq.*, the Chapter on the Supply of Raw Material.

15. *Ibid.*

16. *Ibid.*

17. *Ibid.*

After making the point that the proportion of 'independent' weavers is as low as 20-30%, the FFC has lost track of this fact in the rest of their discussions. They base all their arguments about the handloom industry in parentheses to the latter, quietly ignoring the fact that as a direct consequence, the bulk of the yarn consumed by commercial handlooms cannot be subject to most of the influences—ignorance, poverty and helplessness—they suggested as being derogatory to the handloom weaver. This broad limitation circumscribes the utility of their analysis. We, therefore, propose to deal with their contentions on that basis alone.

The geographical and locational dispersion of handloom weaving is an universally accepted fact. The consumption of yarn by each handloom is very small, and not infrequently, highly diversified in qualitative requirements. Remarkable seasonality of intensity of operation is also universal, in consonance with the pattern of consumer demand. On the other hand, the production of yarn is concentrated in a few hundred units, these further displaying remarkable locational concentration. The rate of yarn production inside mills is, naturally enough, more uniform, and has no equally marked seasonality of production ups and downs to conform with the final consumer (weaver's) demand for yarn.

The central problem in the marketing of yarn for handlooms in normal times is the balancing of these diverse structural tendencies. Steadily mass-produced uniform qualities of yarn have to be moved at rates varying according to seasonal phases of demand, in the minutest quantities, possibly diversified further in terms of quality, to lakhs of handloom weavers, spread out over vast geographical areas. At almost every stage in the marketing of yarn, therefore, a 'middleman' function is present, which leads to a multiplicity of middlemen, especially towards the final steps in marketing, where turnover is limited, more or less, by the number and types of looms in a village, few villages, or centres. Problems of financing arise likewise, at every stage.

Whether this functional multiplicity has degenerated into an arbitrary, further proliferation is a question to be settled exclusively by reference to facts, which the FFC¹⁸ has failed to provide, even after three years of labour. The FFC has singularly failed to appreciate the former, and has failed to ask of itself the question whether multiplicity of middlemen necessarily leads to a pyramiding of prices that may be

18. The FFC's fond use of 'Pyramidal' meaning the same as an extortionate, unjust structure of selling organisation, and therefore, of prices (pp. 88-9) is likely to be justifiable in only one eventuality. The presence of (i) *too many* middlemen (ii) *may* lead to such (iii) *low* returns to them individually, and lead to (iv) *widespread* demoralisation of trading standards, and honesty. The limitations numbered out in the preceding sentence underscore the points that need to be proved, or are uncertain in character.

regarded as objectionable. Since there cannot be any process of marketing which does not involve pyramiding of prices, valid objections can be taken only against the unreasonableness of rewards in relation to services performed.

In judging this functional multiplicity, we also need to appreciate the historical circumstances attendant on its growth. Depending on yarn spun by hand (and, therefore, probably concentrated in cotton-growing regions), produced on a small scale and essentially locally, and catering to a small regional market, the handloom industry of the pre-1850 years¹⁹ was geared to a highly stable competitive pattern. The hand-spinning industry, in the wake of the growth of railways in India,²⁰ yielded place to machine-spun yarn. The same factor that brought to the handlooms extensive and cheap sources of yarn, also broadened out the local markets into wider markets, of which the handicraftsman had no direct knowledge. The linking of markets of cloth, and the locational concentration of yarn supply gradually brought into existence a group of middlemen functions, and newer organisational methods to the production of handloom fabrics. This transformation took place in a period of Indian economic history, when individual initiative and non-institutional, personal finance were the only supports available for trade and industrial expansion. Under this orientation, aided by many other factors, the production of handloom fabrics from mill-made yarn expanded remarkably upto 1914 and markets for commercial handloom fabrics were no longer primarily local.²¹ This new organisational approach in the affairs of the handloom industry has been pitted in the twentieth century, especially after the end of the post-war (first) boom, against materially different competitive conditions. The tussle for the Indian fabric markets was keener and more rigourously competitive during that period, while a general and continuing decline in cotton prices undermined all stability about the price levels of yarn and piece-goods. A slow but superior level of labour deployment was achieved, and as the mill industry spread out to lower wage cost areas, which were in a better position to enforce wage reductions than were mills in Bombay or Ahmedabad, the competition between mills and handlooms touched on a vastly increased number of points of contact than was the case formerly. Changing patterns of consumer preference

19. As early as 1853, the imports of British yarn into India had reached 148 m. lbs. and went on rising steadily upto 1881, to 251 m. lbs. Figures from *Commerce and Industry*, 1919. Statistical Tables, by W. Page.

20. *Ibid.*, p. 176; in 1870, India had 4,775 miles of railway; in 1875, 6,519 miles; in 1880, 9,308 miles; in 1885, 12,368 miles; in 1890, 16,345 miles; in 1895, 19,408 miles; and in 1900, 24,752 miles. By 1914, 35,285 miles had been built altogether.

21. N. M. Joshi, in his *Urban Handicrafts of the Bombay Deccan*, 1936, argues along broadly similar lines, although not in the same context.

favoured mills against handlooms. This vastly altered competitive pattern was met partly by the adoption of the fly-shuttle handloom, partly by other technical changes. But the most universal method of meeting competition was the reduction in labour costs by reducing weaving wages.

Against this increasingly unfavourable background, the middleman in the handloom industry should be viewed. At least some of the points made above were stressed by the FFC from the point of view of the handloom weaver, but they did not make an attempt to understand the strain on the middleman during such a period and only substituted for it verbal, sentimental polemics. Writing under the shadow of the shortage in yarn supplies in 1941, the FFC were not unsurprisingly concerned about the speculative disruption of the yarn market, but there does not appear to be any support for assuming that upto 1939, speculative influences had any influence of the type suggested by the FFC. Almost until 1940, there was a veritable crisis in the yarn and cloth markets owing to the accumulation of stocks, exerting continuous, downward pressure on prices, and one fails to comprehend how the FFC can have regarded the speculative influences as very important.

The argument of the FFC that forward contracts with mills enabled the contractors to even undersell mills at other times is open to two criticisms. One wonders, in the light of what we consider as the central problem in the marketing of mill yarn to handlooms, how this could be regarded as objectionable from the point of view of the handloom weavers. The FFC did not appreciate that forward contracts are not speculative contracts, but afford to the mills indication of production requirements, a few months in advance of actual production, and of the probable revenue from sales.

Another major contention made by the FFC in relation to the intermediaries in the yarn trade is that upward price rises at the wholesale and retail levels synchronise more quickly, whereas downward adjustments at the wholesale level are reflected only after considerable time at the retail level. The FFC does not cite the arguments or the data that led it to this conclusion, and the matter ends there.

The FFC has one more grouse against yarn dealers. According to them, there is "a scandal of such high profit-making on a raw material at the expense of a helpless class of people".²² The FFC supplies in support, figures some of which we reproduce below :

22. *Ibid.*, p. 96.

*Price of Grey Yarn (Madura Mills, 40s Grey) in June 1941
(For a Bundle of 10 lbs.)*

					Rs.	a.	p.
1.	Wholesale Price at Calcutta on 26th May 1941	...			8	13	0
2.	Local Mahajans (including freight) at Palanganj	...			9	13	0
3.	For local Paikars buying from the Mahajans at :						
	Palanganj	...	...	...	9	15	0
	Jayapara	...	...	...	9	4	0
	Agra	...	...	...	9	6	0
	Balamatachar	...	...	...	9	10	0
4.	Retail Selling Price of Paikars at :						
	Jayapara	...	...	...	9	14	0
	Agra	...	...	...	9	10	0

Source: FFC Report, p. 95, Table XXXV.

The only intrinsic information gathered from the above table is that the Paikar at Jayapara makes a gross profit of 10 annas per 10 lbs. of grey yarn, whereas the one at Agra makes a gross profit of 4 annas. Since the latter was no philanthropist, one would have liked the FFC to account for the difference. One also wonders how the FFC managed to regard the total difference between the purchase and the sale price as equivalent to profit, which is only a residual after deducting the various expenses incurred by the dealer in question. All the other figures²³ supplied by the FFC fail to throw any material light on trading margins on the net basis, and suffer from the same drawbacks as apply to the figures submitted above.

In fine, the FFC has not merely been unable to conclusively prove the charge of profiteering, but has failed in even putting up a reasonable *prima facie* case to that effect.

The FFC's stand in relation to mills as suppliers of yarn may be now subjected to analysis.

The charge that the quality of the yarn supplied to handloom weavers is inferior to the yarn consumed inside their own weaving sheds (although this can apply only to composite mills), is substantially correct. Acceptance of this fact at least partly recognises the fact that as slower movements on the handloom place less strain on the yarn during weaving than is the use in mechanical weaving, it can advantageously use slightly inferior yarn. There is no reason for assuming that selling such yarns involves the handlooms into any disadvantage of price or quality.

The comments made by the FFC on the practices of false or misleading labelling and shortness of length, etc., are well supported by facts although it should be clear that the existence of market leaders

23. *Ibid.*, pp. 96-7.

whose qualities of yarn had a premium over others, and the general weavers' tendency towards establishing price differentials in favour of preferred brands of yarn prevented these defects from being universal. It is willingly granted even by the FFC that these malpractices are not rampant throughout the industry in India.²⁴

The second contention of the FFC, suggesting mills' unwillingness to deal with weavers or co-operative societies, is probably not intended so much as condemnation, as a reflection on their conservatism.

The third suggestion of the FFC is that regional influence of a quasi-monopolistic character is possessed by mills, and that it would facilitate some sort of a tacit agreement amongst them as to the practice of making bulk sales. The first part of the assertion is an over-simplification of the price and market leadership elements available to a few mills, and the latter part is more a prognostication in possibilities, rather than an act of fact-finding.

The FFC's findings on certain other organisational aspects of the handloom industry, and their opinions on the capacity of the handlooms to survive, are primarily based on a rather biased reading of economic facts, as shown in the first stages of our examination of their views. The inadequacy of the factual base demonstrated, detailed criticism on the lines hitherto adopted is not necessary. Moreover, the wider re-appraisal we seek to make of the handloom industry involves the establishment of certain fundamental propositions, often factual in character, and these necessarily imply a consideration of the FFC's views, at that stage.

B. A RESTATEMENT OF THE POSITION OF HANDLOOMS

Economics of Technique.—A handloom differs from a mechanical or a powerloom in its exclusive reliance on manual energy for the purpose of securing every motion involved in the weaving of cloth. Synchronisation of the various motions in their proper sequence usually involves a stoppage of one or the other of them, so that weaving operations on a handloom have lesser continuity than is feasible on a powerloom. The regularity of motions so essential if the final product is not to present an uneven appearance is more difficult (and, therefore, takes longer time to acquire as a habit), to maintain on a handloom. The slower pace of normal human motions and the stoppages involved lead to the handloom producing cloth at a very slow pace. The speed of production is faster for plain cloths than for more complicated fabrics. The speed of production is slower for fine count cloth, than for medium count fabrics, and the latter may be produced only at a slower speed

24. *Ibid.*, p. 100.

than coarse count fabrics. This is so because production of cloth is the interspersing of wefts into alternate sheds of warps, and the number of such interspersions (or picks, as they are called by technicians) is fewer when fabrics are made from the thicker or coarser count fabrics, and greater when cloth is made from the finer (thinner) counts of yarn.²⁵

Two main types of handlooms have been in use in India—the throw-shuttle and the fly-shuttle. In the former, which was almost the only type of loom adopted before 1900, the picking motion involves a throwing of the shuttle containing a pirn of weft yarn by hand, which meant that for cloths other than those of small widths, two persons would have to throw the shuttle to and fro. In the fly-shuttle loom, which is finding wider acceptance since the first decade of this century, the throwing of the shuttle is done by means of a string arrangement which enables the shuttle (which is wheeled, in addition) to be banged by pickers at either end of the shed of warps. The fly-shuttle enables, therefore, weaving of wider width cloths by one man, as well as quicker weaving of fabrics. Estimates of speeds possible on each type of loom vary, but the following figures of A. F. Barker²⁶ are probably as good as any other, and also indicate how even more primitive looms than the throw-shuttle compare with the more modern handlooms :

				Speed in Picks per Minute
Portable loom	...	...	...	10 to 20
Throw-shuttle loom	...	...	...	40
Fly-shuttle loom	...	...	...	80

A very simple juxtaposition of the above figures against the remarks on picks per inch in a fabric, depending upon whether it is coarse, medium or fine, enables us to appreciate the greater resultant final production when employing a fly-shuttle on coarse goods, than when it is employed on fine goods. The arithmetic of a simple illustration would clarify matters. If fabric A has 20 wefts or picks per inch, and fabric B has 80 picks per inch, a fly-shuttle weaver with a speed of 80 picks per minute would weave 4 inches of fabric A, and only 1 inch of fabric B in a minute. According to Amalsad,²⁷ the outturn would be 100% greater for coarse counts, 50% for medium counts, and 25% for fine fabrics.

25. This applies, of course, equally to powerlooms.

26. *A Report on the Cottage Textile Industries of Kashmir*, p. 87.

27. *Handloom Weaving in the Madras Presidency*, p. 25.

A further remark may be made with regard to speed of outturn. It varies inversely with an increase in the width of the cloth,²⁸ because the shuttle which intersperses the weft between the warps has a greater distance to travel when the width of the cloth is longer. Applying the simple rules of arithmetic should make this very clear. If two fabrics A and B have 20 picks per inch, but A is 40" wide and B is 20" wide the shuttle will have to travel in the course of weaving 1 inch of fabric A (80 × 40) inches, and (20 × 20) inches in the case of fabric B. The shuttle when traversing at a uniform speed must therefore take double the time for weaving a given length of fabric A as compared to fabric B.

In other words, apart from the skill of the weaver and the quality of the yarn, weaving outturn of cloth is a function of the complexity of construction, the fineness of the yarn, and the width of the cloth.

The degree of fineness of yarn is important from another point of view. A pound of yarn of count 1s is not the same in length as 1 lb. of count 2s. 1s weigh only 840 yards²⁹ in a lb., 2s weigh (840 × 2) yards, and 100s weigh (840 × 100) yards. We take up extremes—1s and 100s—for a clear presentation of the difference, as judged by requirements of yarn in fabrics, in terms of the lengths of the warp and the weft yarns.

Fabric A : 100s warp ; 80 warps per inch ; and
100s weft ; 60 wefts or picks per inch.

Fabric B : 1s warp ; 20 warps per inch ;
1s weft ; 20 wefts per inch ;

Width 40" is the same in both cases ; shrinkage of yarn to be ignored ; and length of fabric, 1 yard.

For Fabric A will be needed :

as warp : $(80 \times 36) \times (40)" = 1,15,200" = 3,200 \text{ yards.}$

as weft : $(60 \times 40) \times (36)" = 86,000" = 2,400 \text{ yards.}$

For Fabric B will be needed :

as warp : $(20 \times 36) \times (40)" = 28,800" = 800 \text{ yards.}$

as weft : $(20 \times 40) \times (36)" = 28,800" = 800 \text{ yards.}$

5,600 yards/84,000 yards then represents the weight in pounds of yarn in a yard of fabric A, and 1,600/840 yards the corresponding figure for fabric B. In other words, one lb. of yarn of 100s would yield, for the particulars of our construction, 15 yards of fabric A and one lb. of 1s only .525 yards.

²⁸. This also applies to powerlooms.

²⁹. J. E. Holme, *A Handbook of Cotton Spinning*, 1901, p. 35 *et seq.*

Yarn Supplies.—This relationship, based on the merest rudiments of textile technology is vital for the purpose of appreciating many of the changes in the yarn situation. It should also be clear from these that poundage of yarn when used as an aggregative measure resulting from adding up of the weights of various counts of yarn may have little significance, unless some indication is given of the composition of the aggregate according to counts. In other words, our estimates of the aggregative yarn situation have but little conclusive significance, unless we are in a position to arrive at a more or less satisfactory category-wise break-up of the total supply. The FFC put in such an estimate for the year 1941, which yielded the following results :

—				Yarn consumed by handlooms	Percentage of Total
1s to 10s	...	...	...	72	20
11s to 20s	...	...	...	124	34
21s to 30s	...	...	...	70	20
31s to 40s	...	...	...	51	15
Above 40s	...	...	...	43	12
				359 m. lbs.	100

Source: Adapted from the FFC Report, p. 113.

It is impossible to be precise, but on the assumption that the modal ranges of total mill production set the maxima for yarn supplied to handlooms in a given range of counts, we may regard 6s as the average count in 1 to 10s ; 14s as the average count in 11s to 20s ; 24s as the average count in 21s to 30s ; and 45s as the average count in the range of counts above 40s. This yields the figure of 21s as the average count of yarn consumed by handlooms. In view of the unreliability of the basic FFC estimates, however, it may be safer to regard the figure as a range, say from 20s to 24s.

In the earliest phase of our analysis, namely from the triennium 1896-7 to 1898-9 onwards upto 1914, probably a higher average count of yarn was utilised than was the case before that triennium, and the improvement continued, as a very slow process in consonance with, and sharing to a smaller extent the general upward tendency in average count for mill production of yarn as a whole.

During the last few years there has been a marked decline in the yarn of higher counts offered to handlooms by the mill industry. Taken together with the greatly reduced importance of imports as the source of higher counts of yarn, the result is that the average count of yarn offered to handlooms is now lower than the range, 20s to 24s, obtaining in 1941. In the six months ending June 1951, the average monthly deliveries of yarn were as follows :

				Yarn Deliveries, (singles) to the Non-mill Sector	Assumed Average Count in Each Range
Upto	6s	...	...	1.08 million lbs.	3s
6s	to 10s	...	...	1.09 "	8s
10s	to 20s	...	...	6.92 "	15s
20s	to 40s	...	...	6.83 "	30s
Over	40s	...	...	1.39 "	45s
				17.33 "	

Source: Yarn figures collated from Gandhi, M. P., *The Handloom Weaving Industry, 1950-51 Annual*, p. 78.

The average count for the entire non-mill sector approximately works out to 16s, and in view of the small imports from abroad the average for handlooms is not likely to materially exceed this figure. An indirect proof and check is available pointing in the same direction. According to the Census of Manufactures, 1948, mills sold and delivered in that year 351 million lbs. of yarn, the sales realising less than Rs. 63 crores. This gives us an average price of Rs. 17-14-0 per bundle of 10 lbs. for all yarn (singles as well as doubled) which is *approximately* the price as given in the Textile Commissioner's price³⁰ schedule as the price for 17s (singles as well as doubled).

In the light of this lowering of the average count of yarn supply from its pre-war position, our preceding statement of the relationship between counts of yarn utilised and the yardage of cloth production becomes more significant. The result is a greater fall in cloth production by handlooms than is conveyed by the decline in yarn supply, of which the details are worked out below :

				1940	1949	1950
1.	Yarn produced by mills	...	...	1,440 m. lbs.	1,359	1,174
2.	Yarn consumed in weaving cloth by mills	...	...	1,037 "	970	873
3.	Yarn delivered for Govt. purposes	...	...	1 "	3	2
4.	Mill yarn delivered for export	...	...	7 "	41	87
5.	(1-2-3-4)	...	...	396 "	346	213
6.	Imports of cotton yarn	...	...	10 "	21	3
7.	Yarn available for the non-mill sector [i.e. (5) + (6)]	...	...	406 "	367	216

Source: Gandhi, M. P., loc. cit., p. 78.

30. Government of India, *Manual of Control Orders*, p. 611.

What proportion of the 'free' yarn is available to handlooms? The blanket figure of 76% suggested by Prof. M. P. Gandhi³¹ is, of course, not acceptable in view of the importance of other users and uses of yarn. The estimates of these are supplied below, with remarks about source of information or the basis of estimation placed in parentheses and relate to 1948, for which the Census of Manufactures is available.

1. Hosiery Manu- facture	30-35 m. lbs.	10 m. lbs. were produced inside bigger factories (<i>vide</i> Monthly Statistics of Spg. & Weaving); The FFC (page 272) put the aggregate production at three times of the former figure. We have also further raised the estimate by making a margin for waste in the process, which amounts to 20% or so.
2. Powerloom Consumption	40-45 m. lbs.	Nearly 33 m. lbs. were consumed by the bigger powerloom factories in 1947 and mills according to the Census of Manufactures. We add conservatively 7 to 12 m. lbs. to the former for making up the gap in territorial coverage and the smaller factories not covered by the Census.
3. Tapes and Niwars	1 m. lbs.	The Census figures adjusted upwards by 40%.
4. Cotton Banding	2-3 m. lbs.	Mill consumption of purchases, plus sale by mills, plus consumption of bandings made by the mills themselves.
5. Cotton Belting	1-2 m. lbs.	Based on Tariff Board data.
6. Fire Hose	1 m. lbs.	
7. Tyre Cord Fabric	5-6 m. lbs.	On the assumption that 70,000 spindles engaged in this type of work according to our information, produce about the same proportion of yarn as the total spindleage in the country.
8. Fishing Nets	5-6 m. lbs.	FFC figures adjusted upwards by 25-40% to account for the greater fish trade.
9. Sewing and Other Threads	8-9 m. lbs.	Census figures (7 m. lbs.) adjusted upwards to account for deficiency in regional coverage, and smaller, separate doubling plants.
10. Jute Mills' Consumption	3-4 m. lbs.	2 million lbs. of singles yarn plus yarn used in cotton bagging cloth.
11. Electric Motors Industry, and the Insulated Wires Industry	1-2 m. lbs.	No factual basis.
12. Miscellaneous	5-10 m. lbs.	No factual basis.
102-124 m. lbs.		

We now set off these figures against the yarn made available in the 'free' sector as calculated above, i.e. as a residual quantity, ignoring

the question of stocks,³² which were known to be very high during 1948 as well as 1949 :

	'Free' yarn	Estimated Non-handloom Consumption of 'Free' Yarn	Yarn Available to Handlooms
1948	406 m. lbs.	102-124 m. lbs. a year, approximately.	
1949	367 "		
1950	216 "		
Total	989 "		
Annual Average	330	102-124 m. lbs.	206-228 m lbs.
1936-39 Average	336	70 m. lbs.	266 m. lbs.

The decline in yarn consumption, viewed together with the decline in the average count of yarn, has obviously led to a more than proportionate fall in the production of handloom cloth, which is brought out below :

	Yarn consumed by handlooms	Ratio of conversion of yarn into cloth	Estimated average count	Cloth production
1936-39	266 m. lbs.	1 lb. of yarn = ³³ 4 yds of cloth.	21s	1,064 m. yds.
1948-50	206-228 m. lbs.	1 lb. of yarn = 3.5 yds. of cloth.	16s	721-798 m. yds.

The tentative nature of our conclusions, and the impossibility of arriving at statistically precise correlations may not be over-emphasized. But the generality of background provided therein should enable a better understanding both of the structure of the yarn market and of other aspects of the handloom industry with which we now set out to deal.

Extent : Scope and Employment.—Handloom weaving, in the earliest stages, was probably concentrated in regions where the growth of raw cotton facilitated hand-spinning. The growth in the use of mill-spun yarn in the handloom industry has freed handlooms from the

32. Mill stocks of yarn in the end of 1947 were 48 m. lbs.; by September 1948 they had risen to 101 m. lbs.; and it was only in May 1950 that the 1947 level of stocks was touched again. By averaging out the 'free' yarn supplies for three years we smooth out the influence of such a stock movement, and it also is in greater consonance with the fact that the consumption of these excessive stocks was spread in actuality over a longer period than a year.

33. The FFC employed a ratio of 1 lb. of yarn = 4 lbs. upto 1930-31; and, while using the former for later years also suggested another slightly higher ratio (pp. 280-90). If our assumption of the average count (21s) is correct, there is no justification at all for raising the yardage. And actually, there might also be a case for a small reduction.

necessity of being regionally dispersed in a pattern more or less coincident with the spinning industry, although without adopting a level of regional concentration on a par with the mill industry. The handlooms are to be found widely dispersed, although many centres of intense concentration do exist.³⁴

That the existence of these centres makes commercial handloom weaving a largely urban industry was the most important contribution made by the FFC³⁵ to the general understanding of the industry.

The existence of centres³⁶ of this type also coincides with a tendency towards specialisation on a centre-wise basis on a few major types of cloth. By bringing together a large number of weavers or weaving factories, these centres probably render possible the large-scale use of better and more specialised preparatory treatment of yarns.³⁷ The possibilities of establishing a reputation for the products, on the basis of town or area of manufacture, are obviously greater in this case. It is also not unlikely that the imitative spread of improvements or innovations can be easier and faster in the industry concentrated in a centre rather than spread out over numerous villages. A closer identity of the wage or commission basis offered to weavers in a centre is also a natural consequence, although no approximation to standardised wage rates is to be expected.

The handloom weavers are increasingly coming under larger units of operation. The growth of karkhanas, dating back to only 1880 or thereabouts, has now become a major facet of the structure of the handloom industry. It is not safe to generalise, but the following results relating to Sholapur are suggestive of the implications :

Karkhanas	Average No. of labourers per loom	Value of yearly production per loom
		Rs.
1- 6 looms	1.99	408
7-80 looms	1.92	531
All looms	1.94	497

Source: Kakade R. G., A Socio-Economic Survey of Weaving Communities in Sholapur, 1947, pp. 47 and 57.

34. Dr. Venkatraman arrives at an interesting classification of the districts of Madras Presidency according to their having a certain number of weavers out of 1,000 male principal earners. In 3 districts, in 1931, he finds more than 40 weavers; in 8 others between 30 and 40 weavers; in another 4 districts, between 20 and 30 weavers; and, in the rest of the districts, less than 20.
35. Report, pp. 65-68.
36. *Ibid.*, p. 66.
37. Amalsad regarded preparation costs as the main handicap of the handloom weaver. He approvingly quotes T. M. Clarke, Textile Expert to the Government of Bihar and Orissa, to say that 16 handloom weavers can equal the out-

The existence of larger units (having in extreme cases as many as 600 looms in South India is not at all unusual),³⁸ taken together with the rapid growth of the co-operative movement must be regarded as one of the more important structural changes—on a par with the introduction of the fly-shuttle loom—which has come over the handloom industry, although manifesting itself in a number of different ways. In other words, the handloom industry is now harnessing superior organisational and managerial skill, and is in a better position to achieve the more elementary economies of a larger scale of technical operation, and of marketing.

The broad pattern of the regional dispersion of handlooms, spanning the years 1921 to 1951, is submitted below, and in judging the aggregative approximations these underlying currents may not be lightly ignored, and the important difference between commercial and non-commercial weaving may be kept in mind.

Regional Distribution of Handlooms (000's)

—	1921 (Census)	1932 (Tariff Board)	1940 FFC	1950* (Govt. of India)
Assam §	421	425	421	480
Bengal	214	200	142	97††
Bihar	124	150	103	196†
Bombay	...	110	127	161†
Baroda	...	...	...	...
C.P. & Berar	...	100	79	105†
Madras	169	225	340	841††
Orissa	41	...	48	130
Punjab	270	140	284	46
United Provinces	...	75	244	253
Travancore-Cochin	...	...	22	80††
Hyderabad	115	140	115	200††
Mysore	...	...	50	35
Rajputana	...	...	90	1
Total	1,458	1,806	2,193	2,861

* Active Handlooms.

† More than 30% fly-shuttle looms in 1940 (FFC).

‡ More than 60% fly-shuttle (FFC).

§ Mainly non-commercial handlooms.

put of 1 two-loom weaver on powerlooms, but 259 persons working manually would be required to do the work of 1 person in the mechanical preparatory processes. Since that was written (1919) some progress has been made in the handloom section: specialisation instead of the weaver doing all the jobs, better sizing machines, and better utilisation of preparatory equipment in the bigger *karkhanas*. But in the mill sector the progress of high-speed warping and winding, and the introduction of super-speed Barber Colman Machinery, has almost dramatically shifted the balance in favour of mills, i.e. generally powerlooms. The first commercial *karkhanas* were probably put up at this time; the non-commercial factories started by Christian Missionaries date back to 1844.

38. In 10 South Indian districts the Court of Inquiry on Labour Conditions in Handloom Weaving (1943) found 1,404 factories having 22,200 looms, an average of 16 looms per factory; taking a wider view of the position, the Court of Inquiry found 15% 'coolie' weavers, as it called them, in 1947 as against 8%

The utility of detailed comparisons is vitiated by the general unreliable nature of the information tabled above, and by the political changes affecting the identity of territorial coverage. But some conclusions appear warranted. Firstly, that productive technique displays tremendous variation from region to region, when judged in terms of the proportion of fly-shuttle to throw-shuttle looms. Secondly, the very rapid rate at which the industry can increase its capital equipment, in a period of a seller's market as has happened in Madras, Hyderabad, Orissa and Bihar. The industry in the last two areas, encouraged, and aided by the State, probably indicates the possibility of increased competition in the handloom industry in the future, especially so because the wage levels are rising in Madras, backed by State sanction and action, and stand at a higher level than is the case in Bihar and Orissa. Although it is possible that not all of the active looms may be regarded as actually engaged in weaving, the ease of new entry into the field, probably at the expense of the caste basis of hereditary occupation, is remarkable. Thirdly, that handlooms are now an occupation for a substantially greater number of persons than was the case in 1940.

There is no reason to believe that these expansive tendencies operate in materially the same direction for each district in a given political division. We submit below an analysis of 10 districts of Bombay Province comparing 1940 with figures for 1946, clearly bringing out the disparate degree of influence of the general trend.

The districts in Bombay Province are divided according to whether the number of handlooms in 1946 exceeds the figure for 1941 (Bombay City and Bombay Suburban District were not covered by the FFC in 1941, and are, therefore, excluded).

	Substantially higher number of handlooms	Substantially the same number of handlooms	Substantially lower number of handlooms
No. of Districts (19)	9	1	9
Districts which recorded the tendency	(1) Ahmedabad (2) Thana (3) East Khandesh (4) West Khandesh (5) Sholapur	Bijapur	Surat Ahmednagar Poona Belgaum Dharwar

Sources: Based on (a) the FFC Report.

(b) Statistical Atlas of Bombay State, Provincial Part.

in 1941. (Pp. 7-8.) See also *Urban Handicrafts in the Bombay Deccan* by N. M. Joshi, pp. 100-01, and the FFC Report, pp. 70-1. The general sympathy for the plight of handloom weavers has led most investigators into ignoring the importance of a structural change of this kind. Dr. Kakade's work is an exception to this, however.

In other words, irrespective of the fact of an overall expansion or otherwise, a continual process of competitive realignments is fundamental in an appreciation of the position of the handloom industry.

It is almost impossible to guess what proportion of these handlooms are now using artificial silk yarn, or other yarns, whether exclusively or in combination with cotton yarn. But it is unlikely, in view of the tremendous growth of the powerloom artificial silk industry and its use inside mills, that the proportion now substantially exceeds the 1931 ratio of 8-10% of the total number of workers engaged in hand-weaving.

The population living by working on handlooms is not easy to estimate in view of the recent growth in the number of handlooms and the uncertain character of the proportionate increase in the handloom weaving time. It is, however, probable that the Fact-Finding Committee's estimates of each active loom having one full-time weaver and $1\frac{1}{2}$ part-time assistants attached thereto exaggerate the reliance, in 1940, on handlooms as an occupation. Their simple multiplication of 20 lakh active looms by $(1 + 1\frac{1}{2})$ is wrong even arithmetically. The services of a part-time assistant are available, certainly when he is a hired labourer, to other weavers, and $1\frac{1}{2}$ part-time assistants per loom would add up to a materially lower figure of assistants per loom. In Sholapur, according to Dr. Kakade's figures quoted earlier, the smallest factories (upto 6 looms) had 1.99 labourers per loom, whereas factories possessing more than 6 looms have 1.92 and the average is 1.94 workers per loom. Since a substantial number of handlooms (as is the case with nearly 80% of the looms situated in Assam) is being worked on a non-commercial basis, no paid non-family labour being employed and many of the preparatory processes are still performed by weavers in some regions, at any rate, even a lower ratio than 1.94 is not impossible. The FFC, we conclude, was not justified in asserting that at least five million workers were required to work two million active handlooms. The number of workers (2.72 m.) recorded by the census of 1931, is certainly a minima; and the approximate figure is not determinate in the present state of information, beyond suggesting that 4 million workers, on the basis of two workers per loom, was probably the maxima then.

The strong influence of the caste structure, and the presence of family labour in substantial numbers lead us to surmise that an equal number of people comprised the rest of the handloom workers' families, which means that, all told, 8 million people were dependent upon handlooms in 1940, at the outside.

Cloth Production Patterns : Marketing Methods.—The cloth production patterns of handlooms may now be summarised.³⁹

39. For statistical aggregates of handloom cloth production see Table B: Cloth Suppliers, Chapter V.

(1) The bulk of the cloth production on handlooms, in terms of yardage and to a lesser extent, in terms of value, comprises of plain, coarse fabrics, woven and sold in grey, or in a few colours, as is evident from the low average count of yarn utilised. This cannot be otherwise for the simple reason that most handloom weavers cater to comparatively limited local markets, and do not have or need higher levels of skill. The ease with which the rudiments of plain weaving can be acquired is as remarkable as the complicated process of jacquard or 'dobby' weaving on more shafts is difficult to acquire, and in the present condition of the handloom industry, imparted only slowly, and through trial and error methods.

(2) A sizeable proportion of the handlooms (not exceeding 20%) is engaged on the weaving of plain fabrics from very high counts of yarn, and on more complicated fabrics of all kinds. It is not surprising, in view of the more varied and exacting requirements of materials when working on higher counts or complicated fabrics, that many of the bigger urban centres are known widely for these more or less specialized types of fabrics.

(3) The cloth production of handlooms, because of the primitive unstandardised character of the equipment, the ignorance and illiteracy of the weaver, and the difficulty in ensuring a mechanical pattern of uniformity by manual processes, lacks uniformity in texture, and suffers from inexactness regarding dimensions.

(4) The ununiform and very small pieces of fabrics that emerge from handlooms are not as suitable for finishing processes as are mill fabrics, and only with greater difficulty may comparable attractiveness of finish be imparted to them. Handlooms produce nearly all the cloths that mills produce, but for each variety they possibly produce a smaller quantity than would be the case with mills. This feature may be as much an advantage as a disadvantage. It could permit greater and speedier attunement with vagaries of demand, and if and so long as they exist, comparatively small demands which may not be good business for mills could be met.

(5) There is, historically speaking, a continued increase in the range of fabrics woven on a powerloom, and judging by the performance of powerlooms the world over and not by what has been successfully done in India alone, there is a very small range of fabrics that may not be manufactured on powerlooms. Sir Alfered Chatterton⁴⁰ asserted in his 'Industrial Evolution of India' (1912), that solid-bordered cloths were one such variety of cloth, which is no longer valid today.

The FFC⁴¹ felt that the handlooms excelled in the coloured styles of cloth because "warps of a short length can be prepared most economically by the hand process and that a number of colours in the weft can be easily introduced reducing wastage to a minimum," aided by the fact that a limited market made the production of such cloths uneconomic for a mill. Cloths above 120s, cloths interwoven with silver and gold thread, cloth woven with multi-coloured designs, extra-ornamented or unique small pieces of cloth, cloths of a small width with designs in the headings and rough cloth of very low counts of yarn, these too were so listed by the FFC.

The FFC does not see any necessity to explain its reasons more fully, nor does it recognise the need for checking up its data with powerloom performance. In fairness to them it must be stated that they recognised the possibility of exaggerating these advantages. But they failed to recognise that for one, none of the advantages resting on grounds like technical superiority of handlooms or the advantage of better attunement with a limited market are realistic in relation to the bulk of handloom cloth production, and that the position has been rapidly altering in favour of the powerloom.

(6) Similar varieties of fabric may be woven, in the same design but with different yarn counts and the same colour or design scheme, competing against each other, especially in the bigger centres. Sholapur is an illustration of the operation of this tendency as stands out from the following table :—

Handloom Fabrics Produced in Sholapur: Proportion of the More Important Varieties

Variety of Saree				No. of looms on a variety	Volume—No. of Sarees	Value ('000 Rs.)
				%	%	
Elkal	...	...	...	33	33	
Fancy Patal	...	...	...	12	14	
Paras Peti	...	...	...	11	12	11
Maheswari	...	...	...	10	10	9
Nipani	...	...	...	9	8	8
Shamsunder	...	...	...	16	16	18
A. Total of 5 varieties				91	93	92
B. Total of 14 other varieties				9	7	8
Total				100	100	100

Yarn Counts Employed		% Share of Each Construction in Total No. of Sarees Produced
30 × 24	...	24
30 × 30	...	37
40 × 60	...	9
60 × 40	...	11
84 × 60	...	5
A. Five constructions	...	86%
B. 13 other constructions	...	14%
Total	...	100%

Source: Adopted from Kakade, R. G., *op. cit.*, pp. 61 and 68.

Marketing methods display a range of variation according to the ultimate destination of the production, according to the nature of the agency undertaking the marketing function, and according to the type of the production patterns.

The central problem of marketing handloom fabrics is far from being the same as the problem of yarn supply. But, broadly speaking, it devolves into (i) the collection of cloth produced in small lots, by lakhs of weavers or karkhanas, into bigger lots for the purposes of movement to consuming areas and (ii) the disposal of the accumulated stocks to the final consumers spread all over the country and for a small proportion of the demand, in other countries. The processes of finishing might be undertaken at almost any stage, and may be mechanically or manually done, but are more liable to be dissociated from the functions of cloth production, than is the case with mills.

Madras used to be the only important exporting province, from both the points of view of the proportion of the total production sent out as well as the absolute level of the quantity sent out; and only in Assam, in terms of both quantity as well as proportion, was domestic consumption more important than sale in the market. Talking of the industry as a whole, about 10% went to the export market in 1940, 15 to 20% was consumed inside the producer's home, leaving from 70 to 75% of the production to be marketed internally.⁴²

There is no reliable information, other than a list of the most important centres which are known by their reputation in the manufacture of some products, about the extent of inter-provincial and intra-provincial trade in handloom fabrics. Two observations are, probably, not without validity: (1) more handloom products are consumed, both on account of relatively greater cheapness resulting from the saving of transport charges and the preference developed for these products during long years of existence, within the boundaries of regions of production

42. The paragraph is based on the FFC Report, pp. 134 *et seq.*

than is the case with the cloth produced inside mills, and (2) that the inter-provincial trade contains a larger proportion of speciality fabrics and superior fabrics, than is the case with the mill industry. The latter will not be the case where a strong regional preference—for example, very wide bordered (1" and more) dhoties, or angavastrams which are essentially South Indian articles of wear—tends to make a product of more or less exclusive use in that region.

The agencies employed in the tasks of marketing are divisible into a small number of broad economic categories, according to their proximity and identity with the function of production.

(1) The independent weaver, the karkhana, and the local co-operative society undertake the entrepreneurial function of production as well as some steps of the marketing process.

(2) When, as in the case of commission-weavers, the entrepreneurial functions are shared between the master-weaver, the sowcar-weaver, or the mahajan, the party not doing the actual weaving takes over at least the first steps in marketing.

(3) Beyond the above two stages, namely, after the first steps of marketing had been completed, the agencies become more varied, and their number and functions become more complex, and usually involve more finance per firm or trading unit, and the nature and distance of the market become very important considerations.

The marketing of cloth, affected so indelibly by the seasonality of final demand as shown elsewhere in this work, is essentially a question of finance and the gains of marketing are realised according to the financial strength of the parties in each category, *inter se*. The independent weaver, being the weakest by this criterion, has the worst of the bargain although briskness of demand can make a major difference to his bargaining strength.

The market-places vary depending upon a number of circumstances—from being the weaver's residence or the consumer's residence, to fairs, shandies, hats, melas, the regular bazaar of an Indian town, or the stores belonging to co-operative societies.

It has not been possible for us to grant the bland statement of the FFC⁴³ alleging that the existence of too many and diverse middlemen leaves not much margin of profit to the weaver. In support of this position the FFC submitted data relating to twenty-five varieties of handloom fabrics regarded by them as staples, and the differences between the middleman's cost and his price realisation were said to illustrate "the extent to which the middleman's profit margin inflates the final

price of handloom fabrics".⁴⁴ To treat gross differences as net margins, as the FFC has done, is absurd; to ignore other considerations which influence textile marketing such as the cost of the fabrics, the facility or otherwise of stock turn, the geographical distances and handicaps involved in the course of the article reaching the consumer, the costs and extent of storage necessary to cope up with the remarkable seasonality characteristic of the normal Indian demand for cloth, is to misrepresent the final picture without justification.

An analysis of the FFC figures,⁴⁵ according to the cost of the cloth and the gross margins is made by us below, which serves to bring out some of the more fundamental aspects of the trade in the products of the handlooms.

25 Staple Handloom Fabrics

Cost of the Fabric to the Middleman	Gross margins as % of cost				No. of varieties
	Less than 5%	5-10%	10-15%	Above 15%	
1. Low Price Staples: Costing less than 20 as. ...	...	3	3	1	7
2. Medium Price Staples: 21 to 50 as. ...	1	4	2	2	9
3. High Price Staples: 51 to 99 as. ...	...	2	2	...	4
4. Fabrics costing 100 as. and more ...	1	1	...	3	5
	2	10	7	6	25

13 out of 16 low and medium-priced staples are sold at gross margins less than 15% and 8 are sold at margins below 10%; whereas, out of 9 high-priced staples 4 are being dealt with on the basis of a gross margin below 10%, and 5 are traded in at the higher margins. A tentative conclusion then is that, a broad but not precise correlation exists between higher-priced goods and a higher average gross margin, and the converse is truer of the low and medium-priced goods.

This disparity of margins is a universal feature of textile trading, and is a result of the variety of influences indicated above, which determine the final price of a textile product.

It is probable that the methods and agencies of marketing are in significant particulars different in the case of the costlier fabrics, from those dealing in the cheaper styles, especially because final consumption is yet largely stratified according to social classes.

More detailed judgments can properly depend only on information based on detailed, factual surveys, and not on the arbitrary, unsupported

44. *Ibid.*, p. 140.

45. Page 140.

opinions of the FFC. And, in the absence of these, we now proceed to survey the future of the handloom industry.

C. THE FUTURE OF HANDLOOMS

(i) The stagnation in the matter of total yarn consumption, during the inter-war period, and (ii) the more recent, greater decline in yarn consumption by them must be important considerations, bearing upon our appraisal of the future of handlooms.

Equally basic in importance is the fact that the handloom is a very poor machine, in comparison with the powerloom, for almost all fabrics that are being produced today on a substantial scale on it. This transfers the burden of compensating the lower technical skill of the machine to the wage of the weaver, the organisational skill available to the handloom industry and the preference of the final consumer, notwithstanding a considerable price disadvantage for its products.

We first demonstrate the technical inefficiency of the fly-shuttle loom in comparison with the modern powerloom, and show how the superior levels of labour deployment now being attained inside mills materially and unfavourably affect the position of the handlooms. Then we seek to establish the wage-advantage of the powerloom as against the handloom, when considered in terms of the total production of each. And, finally we enter into a general discussion of the other factors, which affect the position of handlooms.

Below are submitted the details of production feasible per month on a fly-shuttle loom at the rate of 8 yards per day of 8 hours, in comparison to production on powerlooms, according to the more common levels of labour deployment on them. The average cost per yard of weaver's wages is then worked out, first according to Bombay wage levels, and then in terms of Madras and Uttar Pradesh wage levels.

—	Hand- looms	Powerlooms per weaver			
		1	2	3	4
1. Production per month of 26 days for 8 hours	(8 × 26) yds.	(40 × 26)	(80 × 26)	(120 × 26)	(160 × 26)
2. Handloom weaver's wages per month	Rs. 60				
3. The wage of a Bombay weaver (Rs.)		85	108	130	141
4. Cost of weaving wages per yard of cloth produced	Rs. .288	.0817	.0519	0.416	.0338

The disadvantages of the existing handloom industry are minimised above because we have taken a higher rate of production (8 yards

per 8 hours) than did the FFC (7 yards for 9 hours) on the fly-shuttle loom, and we are making the comparison with wages in Bombay mills. The results on a more conservative basis show :

	Hand- looms	Powerlooms per weaver			
		1	2	3	4
1. Production per month of 26 days, of 8 hours, per weaver ...	163 yds.	1,040 yds.	2,080 yds.	3,120 yds.	4,160 yds.
2. Wages of a weaver per month	Rs. 60				
— Madras ...		104*	100	90	118
— Uttar Pradesh ...		83*	77	144	...
3. Wages of weaving, per yard of cloth ...	Rs. 0.368				
— Madras (Rs.) ...		...	.048	.028	.028
— Uttar Pradesh (Rs.) ...		...	.037	.046	...

* Separate figures for ordinary plain looms are not available.

The cost of weaving on a powerloom, it stands out from the above, is not merely substantially lower than that of weaving on a handloom, but as the number of looms per weaver increases, the advantage in favour of powerlooms increases even further. The extension of 'more looms per weaver' systems in the low-wage cost areas of operation of the mill industry can thus only be regarded as the converse of a process of decline in the handlooms. The inexorable and ruthless economics of technique placed above is accentuated in a graver degree when the unquestioned superiority of mills in the preparatory processes is taken into account.

In the light of these facts, those who regard, like Prof. M. P. Gandhi,⁴⁶ that speed and output are 'somewhat irrelevant', and who regard all reference to the latter as confusing technical and economic issues, appear to be ignoring some of the most important considerations that, on our analysis, have been reflecting themselves in the stagnation in yarn consumption by handlooms during the inter-war period.

The advantages of organisation, and managerial skill inside a handloom factory cannot, apart from exceptional cases, equal those of a mill, whereas the payment of a spinning mill's profits on the yarn, and the costs of handling the latter till it reaches the weaver, must add to the cost of yarn for handlooms, as compared to vertically integrated mills ; so too, the additional problems of handloom marketing arising from small-scale scattered production may not be removed.

In the absence of any advantages in these matters, the handlooms have only three economic bases on which to rely, apart from the seller's

46. Op. cit., p. 12.

market for all fabrics in recent years. They are : (1) the small portion of the fabric-structure where mills in India have not entered into production ; (2) the extent of their consumer following and the degree to which the latter will be effective notwithstanding a considerable price disadvantage against handloom fabrics ; and (3) the pace at which the mills approach superior levels of labour deployment. The first advantage is obviously not of importance, when considering the entire industry. The extent of consumer following has hitherto depended upon the conservatism in matters of dress on the part of particular classes of men and women, and the more or less static dress patterns of the poorer classes of the people who have consumed the bulk of the handloom fabrics. These influences are now possessing only a declining strength, as we establish in another chapter. And, it is likely that the cotton textile industry of India, operating on the basis of higher wage levels than ever before, and having turned of necessity (as a result of the partition of the country) into an exporting industry, will have to pursue more rapidly the tasks of reaching new, higher capital : labour alignments.

This means that the hand-weaving industry must now rely on its consumer following, its capacity to sustain wage cuts upto the lowest levels, or in the alternative seek government support to its operations either by reserving substantial quantities of certain varieties for production by handlooms, or in the alternative, by creating other burdens on the mill industry which equate the margins of difference in technical efficacy. The glaring magnitude of the latter makes the cost of all these compensating measures so very high, and the consequential changes so widespread that one may reasonably have considerable misgivings about their practicability, and therefore, about the future of the handloom industry, taken as a whole.

The extent of consumer following thus is likely to set the minima in the next decade or two, at which the industry can be maintained in terms of production, the maxima depending upon Governmental and public willingness to make sacrifices for a section of the population. The former may not exceed 200 m. yds. a year, once the adjustments to acceptance of decline in the industry are complete.

The process of transition is not likely to be easy, as handlooms have been enjoying a number of advantages in the immediately preceding years. The textile control schemes have made yarn available to them at controlled prices, while fabric prices have almost always remained unpegged in the seller's market. The latter has also enabled them to experiment and share a few more markets with mills. More recently, the excise duty on mill-made fabrics, and the commonly

granted exemption from the sales tax have helped the handlooms, in a negative way. *In the situation created by all these factors, Orissa and Bihar among others, remarkably developed their handloom industries and competition between them and the older provinces of handloom production will become keener in a normal market, and in this disoute the comparatively higher labour costs for handloom weaving in Madras, presently, may be its main handicap against the former. The growth of the powerloom industry may be another complicating factor.*

In conclusion, we may draw attention to some facts, treated in detail elsewhere, having a material influence on the future of the handloom industry. The change coming over consumer preferences is one instance in point, and the development of the finishing departments inside mills is another. The former, as now shaping, is more favourable to mills and against the handlooms, because of their being in a superior position to use the media of advertising and publicity, and the growth of finishing processes means that superior varieties of mill-made goods, in terms of appearance, texture and design, are being offered against the traditional products of the handlooms, although the growth of an independent, processing industry to some extent obviates the handicap to the handloom industry.

The competitive struggle, slowly emerging as the seller's market recedes, and as the fact of India being in a position to produce, for the first time, more mill-made fabrics than her needs, finds the handloom in a weaker position to compete against mills and powerlooms than was the case in 1939, although the profits of the seller's market have added to the capacity of handloom interests to hold out.

The fact must be faced, and the earlier it is done the better, that the bulk of the handlooms must yield ground, in any normal market, to more mechanised forms of weaving. Any attempt to foster the expansion of handlooms is a retrograde step, which will only aggravate the difficult problems of social policy that must arise when a reduction of the dimension and type we envisage is getting through, precipitated by political events like partition. The human considerations involved no doubt underscore the gravity of the situation, but perpetuation behind legislative sanctions, of the present levels of human dependence on handlooms is only capable of acting as a palliative, unless it was so drastic as to be utterly unacceptable in the interests of the entire country. A planned and orderly elimination of the surplus human material acquired during the War and later years, and encouragement of weavers' children into other occupations would form the first plank in any such process ; active encouragement should be preferred to all those who are

willing to leave, concentrating attention on weavers who are engaged in the production of fabrics that are taking all—technical and economic—considerations into mind, likely to suffer most directly from mill competition, direct or indirect ; dovetailing of these schemes, and offering incentives for new factories and industries to be opened out in the affected towns or regions will be of two-way benefit. The need for such a programme, spread over a period of 10 years or so, is urgent, and compelling.

PART TWO

MARKETS AND ALLIED ASPECTS

CHAPTER V

THE STRUCTURE OF MARKETS : THE BASIC FACTS

The structure of the cotton textile markets is complex and has grown more so during the inter-war period. The internal balance of the elements comprising the structure has undergone rapid and important changes—partly as a result of the growth patterns characteristic of the industry as a whole, and partly as a consequence of other changes of a different character. Limitations of the statistical data qualify the utility of many useful quantitative statements that might have otherwise had conclusive evidential value. Any analysis of the market structure must, therefore, be based on extremely careful reasoning, supported by observation and checked with the *qualified* support of the statistical data.

In the interests of clarity and convenience, the basic facts of the aggregative situation on the side of supply are set forth immediately, in this, a separate chapter.

The chapters to follow deal, in that order, with : (i) the changes in the internal structure of mills as suppliers of cloth ; (ii) the agencies participating in the distribution of cotton textile products ; and finally (iii) the factors affecting the patterns of final consumer demand.

A. THE FACTS OF THE YARN MARKET

1. **The Trends in Total Supply.**—The total supply of yarn for those who do not spin their yarn has recorded five distinct phases in development. In the first stage, starting from the 1850's and upto the later years of the 1870's, we had the pioneering phase when production was a greater problem than marketing, and constituted only a tiny fraction of the total demand. The first points of competitive contact between the British and Indian industries were made (the first inroad being on the British supremacy in the yarn market), by 1874, for the products of Indian mills had indisputably displaced the imports of rough cloths and yarns.¹ The years succeeding, which form the second stage in the growth of the demand for yarn saw a continuation of the previous trends and also recorded two major developments. In the first place, a yarn market was found in the growing trade with China and other Eastern countries ; and secondly, the more intensive operation of the horizontal tendencies of the pre-1900 period also encouraged the spinning industry. Imports into India of yarn, as a converse of the growth of the indigenous industry, tended to slow down during this period,

1. Durga Parshad, I., *Some Aspects of India's Foreign Trade*, pp. 182-6. Dr. Parshad rightly regards the development of internal and external transport facilities as the chief cause of economic development during the period, the falling rate of exchange during the period being only of limited significance.

although imports of cloth were not similarly affected. Exports of cloth as well as yarn were materially higher, the latter recording a more prominent rise. These developments are summarised below :—

Year			Imports		Exports	
			Cloth	Yarn	Cloth	Yarn
1881-82	...	...	100	100	100	100
1886-87	...	...	124	103	158	244
1891-92	...	...	120	109	204	422

Source: Adapted from Durga Parshad, I., op. cit. p. 199.

It is not possible to exactly place the starting point of the third phase of growth, although by 1906-7 most of the significant changes were apparent. The early years of profitability had led most of the weaving mills to add spinning departments, and the yarn market in China had already reached its highest intake by 1900.^{2 3} Many of the spinning mills made new investments in weaving sheds, partly to compensate for loss of important yarn consumers (in the shape of big weaving mills), but for the most part, probably motivated by the greater profitability of the cloth trade. The final demand for cloth in the country was also expanding, coincident with the growth of the industry, which was supplying not more than 16% of the internal market by that time. The result was that handlooms were aided in being an expanding industry, to some extent making up the gap caused by the considerable transformation of the industry into spinning-cum-weaving units.

All these trends had reached the culminating point by 1914, which marks the beginning of another phase in the development of the yarn market in India. Non-mill and non-handloom users of yarn became important for the first time, aiding in the aggregate internal market for 'free' yarn being maintained at more or less pre-war (I) levels and even permitting a small but sizeable increase in the thirties. The decline in the export market for yarn, however, brought about a reduction in the total market for 'free' yarn during the entire inter-war period, and a thorough-going realignment of the locational pattern of

2. Expanding steadily from 1870-71. 69 m. lbs. of yarn were exported in 1885-86, and reached without a break. 231 m. lbs. in 1899-1900. This expansion of the Indian trade in yarn occurred largely at the cost of Lancashire. See Sovani N. V., *Economic Relations of India with South-East Asia and the Far East*, p. 21.

3. During the first two decades of this century, China was rapidly turning into a cloth market, instead of being a market for yarn. (*Vide* the Japanese Cotton Trade and Industry, U.S. Tariff Commission, 1921, p. 149.) India's more or less complete failure to participate in this new tendency is probably explained by (i) preoccupation with the great home market, and (ii) the entrepreneurial failure to be bold and enterprising.

the suppliers underscores the strain on the spinning industry during that period.

The present position is the fifth and the final phase into which are extrapolated the earlier trends of decline in the handloom consumption of yarn, and the greater importance attaching to non-handloom users of 'free' yarn. The export market is sizeable, but uncertain due to a variety of reasons. The new regional alignments of suppliers are materially different from those existing only twenty-five years earlier, and have reached the stage of stability.

A synoptic view of the various developments in the aggregate of 'free' yarn is submitted below. The absence of statistical data precludes the separation of the weaving mills of the pre-1900 period as consumers of 'free' yarn.

(All figures in million lbs.)

	1896-7 to 1898-9	1906-7 to 1908-9	1916-7 to 1918-9	1926-7 to 1928-9	1936-7 to 1938-9	1948 to 1950
1. Free yarn available for consumption internally ...	258	282	194	277	336	330
2. Estimated handloom consumption ...	249	268	180	250	266	206-228
3. Other consumers ...	9	14	14	27	70	102-124
4. Exports ...	173	245	153	42	33	45
5. Total 'Free' Yarn ...	431	527	347	319	369	375

2. **The Composition of Suppliers.**—We have already referred to the declining importance of imports as a source of yarn. It has also been noted that vertical integration has become a more universal characteristic of the industry, although as many as 95 spinning mills continue to exist.

There is no precise data available as to the share of the various spinners in the yarn market and the following data claim to be no more than an approximation of the shares of the various sectors of the industry presently. (For Table see next page.)

The actual quantity entering the yarn trade is probably lower by 25 to 30 million lbs., consumed in the manufacture of textile articles other than piecegoods but made by mills. The first two sources comprise the stable and the regular elements in the trade. The mills with a casual surplus are likely to be unsteady in the matter of supplies as they are either offering an occasional excess of yarn over their current demands, or just trying to take advantage of a better turn in the market.

Sources of Yarn Supply	Approximate Quantity	Major Producing Regions
1. Exclusively Spinning Mills ..	242 m. lbs.	Madras, Uttar Pradesh, Bombay.
2. Composite Mills with surplus capacity ..	110 "	Bombay, Madras.
3. Composite Mills having a casual surplus ..	11 "	All over the country.
4. Imports ..	11 "	
	375 m. lbs.	

In their usual sale of the former type, they are not as worried about getting the proper price, as about getting rid of an unwanted surplus, not likely to be of any immediate use to themselves. Their actions, therefore, can at times be highly unsettling to the market. Imports are an equally unstable category, but for different reasons. They comprise the higher counts of yarn, or special qualities which are either not manufactured in the country, or are not produced in adequate quantities. The import policy also has a decisive effect on their regularity and quantum.

The regional distribution of the sources of 'free' yarn, whether for export or for internal consumption, may be observed from the figures submitted below. The States of Madras and Bombay are the main contributors, followed by Uttar Pradesh. But the importance of the yarn trade varies from State to State. Madras depends for nearly seven-tenths of its gross income on it, whereas in Bombay and Bengal it constitutes barely one-fourteenth of the gross value of all products and by-products.

—	Cotton yarn made for sale (1948) (million lbs.)	Share (%) of each State	'Sale' yarn as % of total quantity manufactured	Value of sale yarn as % of total value of all products
			%	%
1. West Bengal ...	7.3	2	17	7
2. Bombay ...	121.6	32	16	8
3. Madras ...	163.2	44	81	67
4. Uttar Pradesh ...	41.5	11	34	21
5. Punjab ...	0.5	...	11	7
6. Madhya Pradesh ...	19.9	5	40	36
7. Delhi ...	6.4	2	18	9
8. Ajmer-Merwara ...	4.8	1	24	25
9. Others ...	4.3	1	35	25
Total ...	369.49	100	21	17

Source: Adapted from the Census of Manufactures, 1948.

An important feature of the pattern of supplies obtaining in the yarn trade is the domination of a single company—The Madura Mills Co. Ltd.,—having six mills. They own about 20% of the spindles spinning yarn for sale, and probably contribute a like proportion to the supply of 'free' yarn. The size of the Madura Mills and their scrupulous regard for quality have given to them the position of a market leader, and a price-setter.

B. THE FACTS OF THE CLOTH MARKET

Upto 1914, according to Odell,⁴ India was the world's biggest import market for cotton textiles. This position is in striking contrast to India ranking as the world's largest exporter of cotton fabrics during 1950-51. The quantitative aspects of the important features of this remarkable growth are given in the Tables A, B, C and D that follow.

The most significant changes in the aggregate production of cloth are summarised below :

(a) The growth of the component categories of the total supply is not merely disparate *inter se*, but is clear proof of compensating movements in directly opposite directions, the production of mills recording a spectacular increase as imports tended to decline even more rapidly. The proportionate importance of each source in 1896-99 and in 1948-50 is seen below.

Years	Mills' Share	Handlooms' Share	Imports' Share
1896-97 to 1898-99	9%	31%	60%
1948 to 1950	77.2 to 77.7%	15.8 to 17.9%	less than 1%

During these fifty-five years, the production of mills has recorded an increase of 1,100% ; the output of handlooms a fall of nearly 20%, and imports have been reduced to being 1/40ths of the quantity in the triennium just preceding the twentieth century.

(b) Newer sources of supply have appeared, amongst them being the 'powerloom' industry, i.e. a weaving industry outside the mills, and the hosiery factories which have not been accounted for in the above tables. On the assumption that 1 lb. of yarn consumed in the manu-

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TABLE "A"
Cloth Suppliers: Composition during 1896-1950

		1896-7 to 1898-9	1906-7 to 1908-9	1916-17 to 1918-19	1926-27 to 1928-29	1936-37 to 1938-39	1948 to 1950
Supplier		(in million yards)					
1. Mills	...	295	667	1,301	1,943	3,742	3,500
2. Imports	...	1,911	2,154	1,397	1,870	654	48
3. (1+2)	...	2,206	2,821	2,698	3,813	4,396	3,548
4. Handlooms	...	996	1,072	720	1,000	1,064	721-798
5. Powerlooms	...	...	...	...	...	36	183-206
6. (4+5)	...	996	1,072	720	1,000	1,100	904-1,004
7. Total Supply (3+6)	...	3,202	3,893	3,418	4,813	5,496	4,452-4,552
8. Cloth available for consumption per capita	...	11.0 yds.	12.6 yds.	9.8 yds.	13.0 yds.	14.4 yds.	12.7 to 12.9 yds.
9. Mills' Share	...	9%	16%	37%	41%	68%	77.2 to 77.7%
10. Handlooms' Share	...	31%	27%	20%	20%	18%	15.8 to 17.9%
11. Imports' Share	...	60%	57%	43%	39%	13%	Less than 1%

TABLE "B"
Cloth Production in India: 1896-1950

(in million yards)

Year	Cloth production by mills	Cloth production on hand-loom	Cloth production on power-loom	Total cloth production	Total available cloth supply	Cloth production as % of supply
1896-07 to 1898-99 ...	393 (29%)	996 (71%)		1,389	3,202	43%
1906-07 to 1908-09 ...	780 (42%)	1,072 (58%)		1,852	3,893	48%
1916-17 to 1918-19 ...	1,544 (70%)	720 (30%)		2,264	3,428	69%
1926-27 to 1928-29 ...	2,170 (68%)	1,000 (32%)		3,170	4,813	65%
1936-37 to 1938-39 ...	3,975 (78%)	1,064 (21%)	36	5,075	5,496	92%
1948 to 1950 ...	4,000 (80-81%)	721-798 (14-16%)	183-206 (3.5-4%)	4,904-5,004	4,452-4,752	107-112%

TABLE "C"
Production, Imports & Exports of Cloth and Yarn: 1926-27 to 1950-51

Year	Production of yarn in India (m. lbs.)	Imports of yarn (m. lbs.)	Exports of yarn (m. lbs.)	Production of cloth in India (m. yds.)	Imports of cloth (m. yds.)	Exports of cloth (m. yds.)
1926-27 ...	807	49	55	2,259	1,759	180
1927-28 ...	809	52	36	2,357	1,939	257
1928-29 ...	648	44	36	1,893	1,913	244
1929-30 ...	834	44	38	2,419	1,897	219
1930-31 ...	867	29	36	2,561	873	188
1931-32 ...	966	32	33	2,990	760	208
1932-33 ...	1,016	45	27	3,170	1,203	169
1933-34 ...	921	32	25	2,945	771	169
1934-35 ...	1,001	34	21	3,397	933	157
1935-36 ...	1,059	45	18	3,571	937	191
1936-37 ...	1,051	29	19	3,572	753	223
1937-38 ...	1,116	22	36	4,084	579	275
1938-39 ...	1,303	36	34	4,269	631	205
1939-40 ...	1,235	41	37	4,013	560	222
1940-41 ...	1,349	19	78	4,269	440	410
1941-42 ...	1,577	8	89	4,494	180	897
1942-43 ...	1,534	1	34	4,109	10	943
1943-44 ...	1,080	1	19	4,871	3	535
1944-45 ...	1,651	*	17	4,726	5	486
1945-46 ...	1,614	*	14	4,676	3	480
1946-47 ...	1,348	*	4	3,890	16	369
1947-48 ...	1,330	9	*	3,770	26	225
1948-49 ...	1,475	11	7	4,380	47	577
1949-50 ...	1,111	14	65	3,850	73	700
1950-51 ...	1,154	3	78	3,663	5	1,268

* Negligible.

TABLE "D"

The Export Market for Cloth: 1896-1950

(in million yards)

Year		Cloth produc- tion by mills	Exports of cloth	Exports as % of mill production
1896-97 to 1898-99	...	393	98	24
1906-07 to 1908-09	...	780	113	15
1916-17 to 1918-19	...	1,544	243	15
1926-27 to 1928-29	...	2,170	227	10
1936-37 to 1938-39	...	3,975	233	6
1948 to 1950	...	4,000	500	12
1950-1951	...	3,663	1,268	34

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facture of hosiery is equivalent to 4.57 yards of fabric, 'powerlooms' and hosiery factories now produce around 400 m. yds. of cotton fabrics, which is slightly less than 10% of the total cloth supply available in the country.

(c) It is clear, notwithstanding the exclusion of hosiery production from our estimates, that the long-term trend is unmistakably for the expansion of cloth supplies at a faster rate than the population growth, although the latest position is influenced by other factors as well. The growth in *per capita* consumption by 32% over the period of forty years (ending in 1938-39) is the unmistakable proof of an expanding market for fabrics, apart from intermittent periods of over-production, as the background of the growth of the cotton mill industry. The former is probably an indication of the slow but positive rate of net economic progress over these years, though no direct year-to-year correlation between the two trends is implied. The fact pointed out when dealing with the equipment patterns that wider width cloths have become the staples of indigenous mill production since the beginning of the inter-war period is responsible for some under-estimation in *per capita* consumption on a square yard basis, although in the main, it probably cancels out with the decline in the import of such cloths.

(d) The additions of a quantitative nature to the cloth supply are accompanied by equally important changes of a qualitative character. Although it is unrealistic to argue that the value of a fabric is always directly correlated with the counts of yarn utilised in its manufacture, the following estimates of the average count of yarn spun are a broad reflection of the improvement in the quality of yarns used in India in the manufacture of fabrics :—

Year						Average count of yarn spun
1907-08	...	...	...	...	...	13s
1919-20	...	...	...	...	...	17s
1923-24	...	...	...	...	...	18s
1933-34	...	...	...	...	...	20s
1938-39	...	...	...	...	...	27s
1944-45	...	...	...	...	...	16s
1949-50	...	...	...	...	...	29s

Another way of indicating the improvement in the quality of Indian piecegoods is by reference to the yarn structure, according to the proportion of higher counts of yarn, given below :—

Counts	1930-31	1934-35	1948
1-30	774	855	1,027 m. lbs.
31-50		125	177 m. lbs.
51-80	9.5	14	77 m. lbs.
80 and above	0.5	1	11 m. lbs.

The addition of processing and finishing departments to mills and the existence of a separate industry specialising in these branches traced in an earlier chapter, also point to the same conclusion.

(e) The increase in cloth production has transformed the relationship between the total cloth supply, and production within the country from one of partial satisfaction to a sizeable surplus for export (Table B). The latter fact was, to some extent, a precipitate development arising out of the partition of the country in August 1947, which placed the new State of Pakistan (with a population exceeding seventy million) outside the Indian national market. It makes the export surpluses bigger than they would have been if the pre-partition population of India had to be provided for out of Indian cloth production. This new relationship signifies the final crystallisation of the cotton textile industry as a whole into a mature industry, an industry the future growth pattern of which must conform more or less closely to the total demand for cloth. No longer will it be possible, without adverse consequences following quickly, to grow independently of national economic progress. In other words, the industry has ceased to be a developing industry, acquiring a higher share with the passage of time of an already existing much higher demand. In its future development, deviation of capacity from the total effective national demand will be a major determinant of the level of its economic prosperity.

The importance of the export demand for the industry, apart from the pivotal connotation attaching to it in maintaining a sound balance of payments position, is not confined to higher profitability or otherwise. Any substantial loss of the export trade involves a parallel, almost equal increase in the cloth supplies within the country, which in effect only means the placement of more mill-made fabrics against the output of the handlooms, a situation the consequences whereof are evident in the light of the analysis contained in the last chapter.

In fine, exports at a reasonable level are the key to overall stability in the industry, in the immediate future.

The strain and stagnation in the 'yarn' supply, and the expanding market for fabrics constitute the most important elements of the factual background provided in this chapter. The intensity of the change in either variable has effects beyond the other, and a complex interaction of a variety of forces is set up. These constitute the subject-matter of the next three chapters.

CHAPTER VI

THE MILLS AND THE MARKET

The existing production patterns are the result of the interaction of many forces, short as well as long term in operation. Of the first type are the changes in production schedules aimed at realising immediate profit possibilities within the limits laid down by the mechanical set-up available at any point of time in an industrial unit. On the other hand, long-term factors are likely to be more permanent, and fewer in number. And, not unusually, the latter coincide with changes in the composition of machinery.

Short and long-term factors, however, are not necessarily exclusive of each other. Nor is it unlikely, that the disturbing effects of the former on the relative importance of various categories of the production structure might occasionally have more than transient significance.

It is to a study of the factors that have influenced, modified and altered the structure of textile production that this chapter is directed. The focal point of our inquiry is the 'mill' sector wherein the most important of the factors mentioned above have originated, and from where their effects have been transmitted to other sectors of the cotton textile industry.

The discussion is divided into four parts. In the first, the possible variations in production and the limits thereof are correlated with the extent of flexibility permitted by the physical equipment ; in the second, the main features of the pre-1914 market for textiles are traced ; in the third, the developments during the inter-war period are covered ; and, finally, in the fourth part, the position emerging from the existence of a seller's market over a decade is analysed.

A. LIMITATIONS OF EQUIPMENT

Equipment patterns lay down, at any given point of time, the broad limits of yarn and cloth production that are technically feasible.

In the finishing departments, the mere fact that many mills do not possess certain types of equipment, such as a cloth printing plant or a mercerising range, can amount to a prohibition on the production of certain types of cloth, except to the extent to which the facilities of independent processers are available, convenient and economical to use.

In spinning, machinery is likewise balanced in the short period for a given range of counts yielding an average count of yarn, which to be substantially modified would require several costly adjustments in the

various machines. The boundary lines thus drawn not only permit of important but limited short-term alterations in the production schedules, but are also capable of being shifted drastically over a longer period and more permanently.

The loom is a more versatile machine than a ring frame, but a fabric 60" wide may be woven only on a loom of 62" or more reed space. A smaller fabric, in terms of width, may be woven on a wider loom, but the slower speed of the latter would enable only less production than a loom of the correct, lesser width. Jacquard or dobby attachments, and such other specialised machine requirements of certain types of fabrics, are in a few cases interchangeable, but are usually an additional limiting factor to the range of fabric constructions that may be attempted by any firm.

In other words, apart from the limitations on the composition of production in a mill that arise from the failure to possess certain types of equipment, or from management policies that closely circumscribe the production patterns, three major considerations of a technical character influence, and to a lesser extent, determine the patterns of yarn and fabric production. They are : (i) in the short period, within fairly broad limits, production schedules may be altered ; (ii) considerable versatility and adaptability is characteristic of many cotton textile machines ; and (iii) the possibilities are always present of making existing machinery the base for an entirely new and different production alignment, over a longer period of time.

Within these outer limits, other forces come into operation. Profit margins may favour the manufacture of certain varieties, notwithstanding contrary technical considerations, at one time, and not at others. Or, the level of labour costs may permit in one area, a particular use of equipment, which at a different level of labour costs, in the same or another area, would be unthinkable. For an individual unit, furthermore, the scale of operation and the extent of diversification of equipment provide additional limits to flexibility in production.

The strength of these forces varies from one period of time to another, and less generally, from one unit to another. It is not altogether unlikely, however, that opposite trends may be discerned in different sectors of the industry. Among the most significant adaptive developments in the equipment patterns are the alterations consequent upon the shift of the industry to finer counts, and the allied growth of the output of higher counts of yarn by mills in India.

As pointed out earlier, a shift to fine spinning means for old mills, the substitution of rings, travellers and spindles of different specifications for those used on lower counts. If the number of spinning spindles remains the same, and provided the entire mechanical set-up was

balanced in the first instance, this also means discarding preparatory machinery rendered superfluous with the decline in the quantity of cotton to be processed. In another sense, the process of shifting to finer counts may be regarded as involving substantial new capital investment, on the one hand, and the risk of a possible loss in the value of the original investment, on the other.

There is another result of the shift to finer counts in vertically integrated mills arising from the fact that fine spindles produce, per given unit of time, only a fraction of the weight (not length) of the yarn produced on an identical number of coarse spindles. The magnitude of the difference involved may be appreciated from the figures given below.¹

Count	Theoretical Rate of Production (lbs. of yarn, per hour, on 10,000 spindles)	
	American Data	English Range
15s	830	720-850
30s	270	200-260
60s	90	70- 90
80s	60	50- 60

The increase in the length of the yarn spun partially compensates for this loss in weight, but notwithstanding that the number of spindles required to match a loom increases substantially with an increase in the counts. This adjustment between the spinning and the weaving equipments can be brought about as well, in practice, by a more intensive utilisation, in the sense of the number of hours worked, of the spinning equipment. This constitutes one of the basic reasons for the growth of shift-working in India during the thirties, especially its remarkable growth in Bombay City and Ahmedabad.

The increase in the average count of yarn spun in India has necessarily meant a wider adoption of this method of balancing spinning with weaving equipment. The present position is reflected in the figures submitted below, relating to December 1950 :—

Average Number of Spindles Worked per Shift			Average Number of Looms Worked per Shift		
1st Shift	2nd Shift	3rd Shift	1st Shift	2nd Shift	3rd Shift
9.39 m.	8.44 m.	2.27 m.	176,000	151,000	21,000

1. *Report of the Productivity Team, Cotton Spinning*, p. 55.

On the basis of two 8-hour shifts, and the third shift being of $7\frac{1}{2}$ hours, 169.66 m. spindle-hours and 2.77 m. loom-hours were worked by the mills in India. Deducting 20% of the spindle-hours (being the year's average), as being directed towards the production of yarn for purposes other than the weaving of cloth, a ratio of 49 spindle-hours to one hour of loom-operation is obtained.

Ignoring the known fact that spinning mills work three shifts on fewer occasions, and spreading out 33.93 m. spindle-hours meant for the production of yarn for purposes other than weaving inside mills, we realise that the 1,408,000 loom-hours of the first shift are matched only by 60.09 m. spindle-hours. In the second shift, requirements of spindle-hours for looms in the second shift are 59.19 m. spindle-hours, as against the available 54.02 m. spindle-hours. The combined deficit of spindle-hours is thus of the order of 14.07 m. spindle-hours in the first two shifts, which must be made up by a surplus in the third shift of the same order.

It is clear that at the present level of average count (30s) of yarn spinning, and at the present rate of yarn production for non-weaving purposes, a single shift of loom operation must be fed by the production of more than one shift of spinning operations. This position is not permanent in its quantitative context, which would vary with changes in the volume of spinning equipment on the one hand, and the average count of yarn to be spun, on the other.

The problems of balancing equipment in this sense, obviously, are material for composite mills and not for exclusively spinning mills. Even so, it is clear that they must be more acute for some units in the industry than for others. The table submitted below brings out this fact, although only indirectly. The differences between the labour complements per shift per mill, and the small number of mills working the third shift are suggestive of these balancing problems. The figures relate, as was the case with the basic information of the preceding calculations, to December 1950 :—

No. of mills which worked shifts				
1st Shift | 2nd Shift | 3rd Shift				
1. No. of mills working only particular shifts ...	30	176	134	
2. Total No. of mills at work ...	340	310	134	
3. Average number of men employed per mill, in each shift ...	1,220	790	335	

Besides the changes attendant on the shift to the production of finer yarns, several other sources of technical adaptability have been utilised at various times. The conversion of narrow width looms into

wider looms capable of weaving dhoties and sarees was one such change, in the inter-war period, in mills in Bombay City. The change-over in a substantial measure of the industry in that city to the weaving of yarn, instead of selling it as such, was facilitated by the adoption of pirn-winding machinery on a very large scale.² This meant that instead of spinning weft yarn directly on ring frames meant for that specific purpose, on bobbins of smaller dimension that would directly fit into loom shuttles, yarn continued to be spun on warp frames, being only later wound on pirns. The warp frames, originally installed to cater to the yarn market, which made no such distinction between warp and weft yarn, thus could be adapted to the needs of a new production situation—namely, yarn spinning for weaving inside the mill.

During the Second World War, this capacity to adapt was increased substantially; and, in many mills well-equipped engineering workshops have come into existence, capable of continually performing and accelerating this adaptive function.

These tendencies, it was noted when dealing specifically with the equipment patterns, were already powerful in the inter-war period, especially in mills in Bombay City, Ahmedabad, and in bigger mills generally.

B. THE EVOLUTION OF THE COMPETITIVE PATTERNS

As the final result of a hundred years of growth, cotton mills have developed into the largest single supplier in the cloth market of India. The process of transformation has involved factors increasing in their complexity with each year, especially during the inter-war period. The transformation has been momentous, moreover, in view of the quantitative magnitudes involved.

Without implying any fineness of the period-distribution, the evolution of the cotton mill industry particularly, and of the cotton textile industry generally, may be divided into three major phases, apart from the pioneering attempts of the first few decades. The early phase, lasting upto 1914, is the phase of the growth of the mill industry when the latter had not substantially impinged upon the spheres of other suppliers in the market, namely, imports and handlooms. The second stage, facilitated by war-time developments, is the period when every advance of production or equipment took place necessarily against the background of increasingly intense competition, and lasts upto a year or so beyond the beginning of the Second World War. The latest phase comprises of the years since the close of the second period, and is

2. See Chapter II: the Wage Situation, particularly the discussion on the changing occupational structures.

characterised by the crystallisation of the industry into an export industry and the re-emergence of normal market conditions.

The Early Phase of Evolution (upto 1914).—By the close of the nineteenth century, the cotton mills of India had evolved into a sizeable industry, comprised of essentially small units under a financial form of organisation that was mainly proprietorial in character. They catered to two markets, the market for yarn and the market for fabrics. The former was a market for intermediate goods and channelized the supply of raw materials for the manufacture of the final consumer's goods, cloth, and accounted for 82% of the total internal yarn production. Geographically this market was divided into the home and the export markets. The market for fabrics was likewise international as well as national, but was less important than the former. For one, it used barely 18% of the yarn produced, and secondly, it supplied less than one-tenths of the required supplies of cloth.

To sum up, two features dominated the cotton mill situation at the turn of the century. The industry's production was mainly comprised of intermediate goods, or producer's goods. Secondly, the output of consumer's goods, namely, cloth, formed a comparatively small but important part of the productive functions of the industry.

Since the production of cloth by mills was only a small portion of the total internal supply, the points of competitive contact between the mills and other producers of cloth were few in number, although there can be little doubt about their existence. But the rigour of the competition was probably subdued by the coinciding simultaneous expansion in the size of the market for fabrics. The rate of expansion, as may be observed from Table B of the preceding chapter, was sufficiently high to raise the availability of fabric supplies *per capita* from 11.0 yards in 1896-97 to 1898-99, to 12.6 yards a decade later, without any major crisis in inventories developing.

The expansive tendencies, which continued to operate upto 1914, more or less, may not be interpreted so much as absence of newer competitive contacts as the slow and gradual assimilation of the latter. This is obvious from the following table :

					(in million yards)	
Source of Cloth supply			1896-97 to 1898-99	1906-07 to 1908-09	Increase	
					Quantity	Percentage
Mills	...	...	295	667	372	126%
Handlooms	...	...	996	1,072	76	8%
Imports	...	...	1,911	2,154	243	13%
Total Supply	...	...	3,202	3,893	691	21%

Of significance is the fact that out of the increase of 691 m. yards in the internal cloth supply, 53% is attributable to the mills, 34% due to imports, and 14% due to the handlooms. Although the quantitative relationships may not be advisably overstressed, it is not unimportant that in terms of the accretion to total supplies, imports should have been a smaller gainer (13%) than the mills, and that handlooms were not able to expand, judged by their share of the expansion, or by reference to the quantity of their additional production, at a rate comparable with either mills or imports.

It is also clear that during the same period, the importance of the yarn market became less to the mill industry, and continued to diminish in volume, although not at the rate likely to be suggested by the figures for 1916-17 to 1918-19 which record the influences of the War and which more properly belong to our next section. The supporting figures are given below :—

	1896-7 to 1898-9	1906-7 to 1908-9	1916-7 to 1918-9
1. Production of yarn	464	650	652
2. Production of yarn for sale	395	488	318
3. Proportion of yarn consumed by mills ...	14%	25%	52%

Contemporaneous and coincident with the increase and the greater rate of increase in mill production was an extension of the range of competitive contacts between mills and imports, as well as mills and handlooms. It arises partly out of diversification of production, and partly out of the strengthening of the position of mills in certain lines of production. The latter is seen from the fact that between 1907-08 and 1913-14, production by mills increased from 808 to 1,164 m. yards, i.e. by 356 m. yards, divided as follows :

Grey and Bleached Piecegoods ...	192 m. yds. (53%)
Coloured Piecegoods ...	164 m. yds. (47%)

The remarkable dimensions of the growth of coloured piecegoods are grasped more adequately when viewed as the percentage increase above the 1907-08 levels of production—128% above 1907-08, in 1913-14.

Likewise, of the additional 192 m. yards bleached and grey piecegoods, shirtings and longcloth claimed 85 m. yards, and dhooties, 47 m. yards.

The rise of new industrial units was a universal characteristic during the period and although the expansion achieved in Bombay City,

the first major area of locational concentration, was not small, there was unmistakable proof of a lag in its rate of expansion. This may be judged from the figures submitted on page 139, which also incidentally bring out the considerably slower rate of addition of new spindleage, as compared with the rate of expansion of loomage.

To place matters differently, in Bombay City additions to existing mills were the principal source of additional equipment ; in Ahmedabad and the rest of India, new mills were the main factors in bringing additional equipment into existence. Furthermore, the rapid expansion of loomage was already making mills more important as producers of the final consumer's goods, cloth, and also tended to diminish the importance of Bombay as a central market for fabrics produced by Indian mills.

The position of mills on the eve of the First World War may now be summed up.

(i) Growing in an expanding final market for fabrics, mills had increasingly integrated the production of fabrics with that of yarn, but the quantity of yarn produced for sale increased at a slower rate than did cloth produced by the mills, although the quantities involved in the yarn market increased sizeably.

(ii) The expansion of the pre-war period favoured mills more than it did handlooms, or imports.

(iii) Production was increasing, as was equipment, both because new units had entered into the productive field, as also because old units, especially in Bombay City, were adding to their own equipment.

(iv) The rate of increase in mill production was a sure indication of the necessity developing, in a foreseeable short period, of diversifying production into new lines, implying as certainly increased competition with imports as well as handlooms. In other words, the point when the growth of the market as a whole could not have contained the faster rate of growth of the mill industry, without causing displacement of one or the other supplier in the market was clearly observable by 1914.

2. **The Second Phase of Evolution (upto 1940).**—Before the triangular contest between mills, handlooms and imports could approach the more effective state of competition, the First World War intervened. Imports declined rapidly from the pre-war level (2,700 m. yds.) to being a third of that level by 1918-19 and 1919-20. The ratio of yarn utilised for weaving by mills to yarn produced increased, being the converse of a sharp decline in the quantities of yarn available for sale. The rate of increase in the share of the mills in the total market for fabrics was accelerated further to take advantage of the profit-opportunities

Growth of the Mill Industry in India: 1895-1914

	1895				1914				Excess of 1914 over 1895			
	No. of Mills	Spindles	Looms	No. of Mills	Spindles	Looms	No. of Mills	Spindles	Looms	No. of Mills	Spindles	Looms
Bombay City	68	21,93,000	20,200	85	30,10,000	48,800	17	8,17,000	28,600
Ahmedabad	16	2,93,000	4,900	49	9,60,000	19,000	33	6,67,000	14,100
Rest of India	63	13,93,000	10,200	122	27,69,000	46,400	59	13,76,000	36,200
Total	147	38,09,000	35,300	256	67,39,000	104,200	109	28,60,000	78,900
Index Numbers	100	100	100	171	175	323			

arising from the shortfall in the total cloth supply, and the allied and partly consequent development of a seller's market in cotton textile products. A comparison of the position between 1906-07 to 1908-09 and 1916-17 to 1918-19 brings out the fact that unlike the years before the War, the growth of fabric production inside the mills was not taking place as a part of a general tendency towards expansion at all.

Source of Cloth Supply	1906-7 to 1908-9	1916-17 to 1918-19	Change	
			Quantity	Percentage
(in million yards)				
Mills	667	1,301	+ 634	+ 95%
Imports	2,154	1,397	- 757	- 35%
Handlooms	1,072	720	- 352	- 32%
Total Supply	3,893	3,418	- 475	- 12%
Per Capita Availability of Cloth	12.6 yds.	9.8 yds.		- 22%

The mills were enabled, in addition, to diversify their production ranges further, the shift to counts 21s to 30s being significantly permanent. The production of yarns upto 20s, however, continued to remain the staple product of the industry.

The importance of this small phase should not be under-estimated, because some of the features associated therewith were temporary and transient. It is more properly understood as an accelerated extrapolation of the growth trends noticed in the earlier period, occurring simultaneously with the reversal of the pre-war trends in the supply of imported and handloom fabrics. At the end of this period, mills had already exceeded the supply originating from handlooms, and reached a stage of equality with imports.

The greater share of mills in the supply of cotton textile products, and the possibility of their adding to this share is the crux of the problem of the cotton textile situation during the inter-war period. The comparison of the supply position during 1906-07 to 1908-09 and 1926-27 to 1928-29 made below effectively brings out the nature of the long-term tendencies at work :—

Source of Cloth Supply	1906-07 to 1908-09	1926-27 to 1928-29	Change	
			Quantity	Percentage
(in million yds.)				
Mills	667	1,943	+ 1,276	+ 191%
Imports	2,154	1,870	— 284	— 13%
Handlooms	1,072	1,000	— 72	— 6%
Total Supply	3,893	4,813	+ 920	+ 23%
Per Capita Availability of Cloth	12.6 yds.	13.0 yds.		+ 3%

In other words, the growth of production of cloth inside mills, by 1928-29, was synonymous with parallel displacing movements in the shares of the other suppliers. The very small rise in the *per capita* availability of cloth reflects the fact that general economic progress probably afforded negligible support to the growth of fabric production.

The loss of the export markets in yarn was rapid after the end of the First World War, and although the Indian offtake of yarn for sale remained at pre-war levels, it was not possible to maintain the production of yarn for sale at the pre-war levels. The strain on the 'yarn' producer³ may be gauged from the following data :—

(in million lbs.)	1906-7 to 1908-9	1926-7 to 1928-9	Change	
			Quantity	Percentage
1. Yarn produced (A) ...	650	755	+ 105	+ 16%
2. Yarn produced for sale (B) ...	488	272	— 214	— 44%
3. (B) as % of (A) ...	75%	36%		

The strains that were implicit in the production trends of the twenties were accentuated further by a number of other causes dealt with in the succeeding pages.

(a) **The Growth of New Mills**⁴.—As a necessary corollary of the profits of the seller's market during the later years of the First World War and the post-war years was an erection boom that gathered delayed strength. Whereas 2 mills were in the course of erection in 1919, 3 in 1920, and 7 in 1921, there were no less than 44 mills in the course of construction from 1922 onwards.

The net result was the addition of 54 to the ranks of working mills during 1921-22 to 1929-30. Loomage expanded from 144,000 to 179,000, and spindleage from 79 to 91 lakhs.

In the decade just preceding the Second World War the tempo of new erection remained at a high level and indeed, the later half of the decade, as may be seen below, saw the post-war (I) boom rate of new erection being maintained :—

3. In his testimony before the Tariff Board of 1926, Sir N. N. Wadia made it clear that the losses of spinning mills were greater than those of weaving mills. Vol. II, p. 170.
4. The section is based on data abstracted from Mehta S. D., *Booms & Depressions in the Indian Economy*, unpublished M.Com. Thesis, 1949, pp. 100 *et seq.*

Post-war (I) Boom. Peak of New Mill Erection	1930 to 1934. Annual Range of New Mill Erection	1935 to 1938. Annual Range of New Mill Erection
44 mills (1922)	17 to 37 mills	42 to 47 mills

The growth of the mill industry during the inter-war years is remarkable because it is clear evidence of the fact that the 'atrophy' of Bombay mills, as Professor B. P. Adarkar⁵ calls it, was not shared by the rest of the mill industry, and the latter probably contributed, to some extent at any rate, towards deepening it. It may also be reasonably regarded, as a converse of the intensification of the competition among mills, and as the extension of the range of competitive contacts with foreign producers.

It may also be noted that the progress of the industry as a whole was tempered by increasing surplus capacity. This may be seen below :—

(Annual Average)			
Period	No. of Idle Mills	Spindleage of Idle Mills (%)	Loomage of Idle Mills (%)
1910-16 ...	23	5.20	2.40
1917-22 ...	9	1.26	0.68
1922-30 ...	26	3.75	3.28
1930-35 ...	29	5.80	6.40
1935-38 ...	29	Not available	Not available

The increasing incidence of idle capacity for the weaving section of the industry reflects the intensification of competitive tendencies in the cloth market.

The addition of new mills has to be viewed in relation to their regional locale—low-wage regions⁶ like South India, or Native States where factory legislation was tardy in enforcement or non-existent, income-taxation had very low incidence (if any), and where frequently Government support actually sponsored industrial expansion.

It was brought out in an earlier chapter that the 'yarn' industry recorded the most important regional shift of this character.

(b) **Increasing Competition with Foreign Producers.**—Implicit in the production trends before the War (I), competition with imported supplies of textiles was extended and intensified during the inter-war period.

5. *Indian Fiscal Policy*, p. 137 *et seq.*

6. See Chapter II: the Wage Situation.

The competitive struggle with foreign suppliers took place on all the three fronts : quantities placed in the market, their composition according to varieties, and the prices at which the goods were disposed of.

The great displacement caused by Indian mills of the foreign producers and (partly, also of the handloom producer), is summarised below :—

—		Indian Mill Production of Cloth (m. yds.)	Imports of Cloth (m. yds.)	Total (m. yds.)
1926-27	...	2,259	1,759	4,018
1938-39	...	4,269	631	4,900
Change	...	+ 2,010	— 1,128	+ 882

The addition to the overall supplies of machine-made fabrics is only inadequately revealed in the above figures, although even according to that data the annual rate of population growth was only one-half of the rate of growth in fabric supplies. The growing use of hosiery products and imported art. silk (rayon) fabrics constituted another addition of major dimensions to textile supplies, during a decade characterised by the greatest decline in agricultural incomes.

In other words, throughout the last decade of the inter-war period, an effective excess of supply over demand for textile products was continually depressing textile markets.*

It should be noted that although the import of cotton textiles was a shrinking category " (see Table C in the preceding chapter), the share of Japan as a supplier rose consistently after 1923-24, mainly at the expense of the United Kingdom :

Percentage Share in the Value of Cotton Piecegoods Imported into India

		United Kingdom	Japan
1900—1914	...	90 to 95%	0 to 2%
1915—1919	...	70 to 93%	2 to 28%
1920—1925	...	79 to 86%	10 to 14%
1926—1940	...	32 to 80%	14 to 55%

Details collated from Venkatasubbiah, H., *The Foreign Trade of India*.

7. Applying the same ratios of cloth and yarn weight, hosiery products (imported as well as exported) accounted for nearly 200 m. yds. and imported rayon yarn and fabrics for probably another 150 m. yds.
8. See the later section on stock crises.
9. See Vakil C. N., and Maluste D. N., *Commercial Relations between India & Japan*, p. 97.

Japanese competition was fostered and favoured by many circumstances.

The devaluation of the yen while it was in progress accounted substantially for the cheapness of Japanese products.¹⁰ But Japanese success was not built exclusively on the transient advantages of a foreign exchange policy.

Japanese wages were low, although not in comparison to wages in India.¹¹ Overhead charges were kept extremely low, and business was

10. See article by Pearse, ARNO S., *the International Cotton Bulletin*, 1934, pp. 109-119. According to Mr. Pearse, 15 to 18% of the lower cost of the Japanese product, as compared to Lancashire, was due to the devaluation of yarn.
11. Japan did not pay lower wages to a worker, although its wage bill for a given complement of machinery were definitely lower. The figures submitted below crystallize this fact:

Spinning Costs in 1937 for 40s Yarn

	Wages per week	No. of workers per 1,000 spindles	Wages per week per 1,000 spindles
Japan	£0-11-9	6.1	£3-12-6
U.S.A.	£3-11-9	3.4	£12-3-9
U.K.	£2- 0-3	4.0	£7- 7-6
British India	£0-10-3	15.0	£8- 9-0
China	£0- 7-7	8.9	£3- 7-5

Source: PEP Report on the Cotton Industry, p. 80

The conclusion is that the level of Japanese wages was certainly an important factor in Japanese competition with English textiles. As against India, the superior technical skill of the Japanese industry was the main factor.

The following details adapted from ARNO PEARSE'S *Book on the Japanese Cotton Industry* (p. 129) and the PEP Report (p. 127) reveal the rapid progress of Japanese labour deployment levels, that were lower than those obtaining in 1912.

*Number of workers employed
per 100 looms*

1912	103
1928	63
1933	18 to 37

Against the above must be juxtaposed the slow progress in India towards superior levels of labour deployment, where even in 1944 single-loom weaving was not uncommon.

This amazing difference in the rates of technical progress of the two industries has not received the deserved recognition, although the Fiscal Commission of 1948-49 (Vol. I, p. 67) grants grudging cognizance thereto.

Indeed, as Prof. Orchard maintains, the estimate of the Tariff Board of 1926 that Japan possessed an 'unfair' advantage of 4%, was inadequate. Based on Indian practice, it failed to take into account the costs of the dormitory system, and the extra lighting costs involved in double shift-working. (*Vide Japan's Economic Position*, p. 440.)

It is obviously unnecessary to contest, in the light of the above data, Prof. Adarkar's contention that the ratio of 1s. 6d. was the villain of the piece in the 'atrophy' of Bombay mills as argued in his *Indian Fiscal Policy* (pp. 137-8).

(Incidentally, the first Table in the footnote explains also the import of substantial quantities of Chinese yarn on the eve of the Second World War.)

organised in the family spirit. Business was transacted on very small margins, and direct contact was always made with the traders of the importing countries. Furthermore, the Japanese policy of maintaining large stocks in the import markets, and the extension of better credit facilities to local merchants were also acting in the same direction. Being big buyers of cotton, the Japanese had a strong bargaining position, a position the advantages of which were fully realised by averaging out the costs of higher-priced cotton bought earlier, with cotton bought subsequently at lower prices.¹²

In terms of technique Japanese advantages were equally varied and numerous. The large-scale Japanese mill specialized on the production of a few varieties. Double-shift working was a widely utilised advantage. Facile adaptability and the swift adoption of major technical changes were made possible by the growth of an indigenous industry manufacturing textile machinery, at prices cheaper than England or even the expanding South of the United States.¹³

Apart from the skills in marketing, technique and organising capacity the Japanese were also not free from very loose methods of costing, as is pointed out by Arno Pearse.¹⁴ Their depreciation policies have not always been sound (see the following table), and the main basis of computation has always been current costs.¹⁵

Depreciation as % of fixed assets				Number of years, during 1906-27, in which the rate was charged
Less than 2%	...	...	...	1
2—3%	...	...	...	5
3—5%	...	...	...	5
5—10%	...	...	...	6
10—15%	...	...	...	4

Moreover, the rate of depreciation charged in the years 1922-27 was barely 3.31% annually of the fixed assets, as against a pre-war average of 4.44%, and the 'war' period average (1916-21) of 11.42%.

In fine, Japanese competitive capacity was based mainly on firm, real foundations, although it is not unlikely that their pricing policies did not always take all elements of cost into consideration.¹⁶

12. Arno Pearse records this fact in his 1929 as well as in his 1934 study. See the *Cotton Industry of Japan & China*, p. 38, and the article mentioned in the preceding footnote.

13. See Pearse Arno, op. cit., p. 85.

14. Pearse Arno, op. cit., p. 35.

15. Based on data supplied in Arno Pearse's book.

16. Dr. Wisslink, after an elaborate investigation, concluded that the widely held view that Japanese mills received a direct subsidy from the Government was not correct. (*Vide* PEP Report, p. 121.) Arno Pearse is of the same view (op. cit., p. 12). Whatever the truth, the offer of Japanese manufacturers to

The severity of Japanese competition was felt more acutely by Indian mills, and especially mills in Bombay City, because of its concentration on particular varieties of cloth,¹⁷ the Japanese cloth being slightly superior, and a little more attractive¹⁸ than the counterpart Indian products. The comparatively limited growth of processing facilities in Indian mills upto 1930 or so was another handicap to the Indian industry.

To conclude, Japanese competition, notwithstanding the shrinkage in the volume of the import trade, intensified the internal competition, and the two factors taken together, were responsible for creating a prolonged period of weak selling by the producers of textile goods. Supplemented in the forcefulness of their operation by other factors mentioned in the next few paragraphs, the Indian market for cotton textiles was never more keenly catered to than during the inter-war period.

(c) **Declining Prices.**—Throughout the inter-war period prices of raw cotton as well as cotton piecegoods and yarn were sagging.¹⁹ The decline in cloth prices is indicated below,²⁰ by way of illustration :—

					Value of Indian mill-made cloth (per yard, in pies)
1920—21	...	...	...	...	76
1925—26	...	...	...	...	44
1930—31	...	...	...	...	44
1933—34	...	...	...	...	36
1936—37	...	...	...	...	30
. . .					

An allied aspect of the decline in prices is the instability, in the short period, that became an integral part of the market situation. This is brought out in the following table :—

sell to an Indian mill Japanese textiles, so stamped that the markings (' Made in Japan ') could be easily removed, and replaced by the name of the mill company, which would enable the goods to be passed off as being of Indian manufacture is against the view that they were *always* scrupulous in their dealings. (*Vide* Government of India Circular to Millowners' Associations, reproduced in Annual Report, 1935, Millowners' Association, Ahmedabad, p. 202.)

17. See written statement submitted by the Millowners' Association, Bombay, to the Tariff Board, 1926, Vol. II, pp. 31 and 177. See also Hardy G. S., *Report on the Import Tariff on Cotton Piecegoods and on External Competition in the Cotton Piecegoods Trade*, p. 49.
18. Ahmedabad Millowners' Evidence, *op. cit.*, p. 44.
19. Declining textile prices during the period were an international phenomenon. So too were many of the attendant problems. See *Report of the British Working Party, Cotton*, Note by Prof. Jewkes, p. 245 ; also PEP Report, p. 25.
20. Data partly from Prof. M. P. Gandhi's written statement to the Tariff Board of 1932 (Vol. II, p. 240) and partly from his *Cotton Industry Annual*, 1937, p. 66.

Period	Value of mill-made cloth (in pies)		
	Maxima	Minima	Range
1909—10 to 1915—16	27	21	6
1920—21 to 1925—26	76	44	32
1929—30 to 1936—37	44	30	14

The decline in prices had many-sided ramifications. Mills considerably lost their financial resources,²¹ and consequently, their bargaining strength. Dealers became more and more conscious of their bargaining strength although their losses were sizeable, breeding a psychology of caution that often descended into fear.²²

(d) **Recurring Stock Crises.**—Rapid accumulation of stocks of cloth with the producers occurred frequently during the inter-war years. Mainly confined to mills in Bombay City during the 1920's, the process of stock accumulation became more universal during the 1930's, and affected the industry as a whole.

During each of the years after 1922 and upto 1928, mills in Bombay City had unsold stocks of cloth in considerable excess of their normal or desirable levels. The stock position of Bombay Mills is submitted below :—(For Table see next page.)

That the inventory crises were mainly localised till the 1930's to Bombay mills is apparent from the erection boom of the twenties in other centres, as well as from the general absence of the mills in those centres from submitting testimony before the Tariff Boards of 1926 and 1932.

The Great Depression of the thirties and the accelerated trends in production had their cumulative, pervasive influence on the entire mill industry, and there is reason to believe that the position of mills in other centres worsened more rapidly as compared to Bombay. It is shown below that the average level of mill stocks was higher, both in absolute as well as relative terms, for the entire industry, while unsold stocks of mills in Bombay City declined to, and remained at substantially lower levels, especially after 1933.²³

21. See also PEP Report, p. 25, for British experience. In the case of the Bombay mill industry the reduction in paid-up capital from Rs. 2,040 lakhs in 1923-24 to Rs. 1,269 lakhs in 1937-38 is indicative of the strain on financial resources. (Details from Mehta S. D., op. cit., pp. 135 and 163.)

22. See evidence submitted to the Tariff Board, 1926, by the Millowners' Association, Ahmedabad, pp. 497 and 503.

23. From 1926 to 1948 the Monthly Statistics of Spinning and Weaving gave a statement every year of the quantity of 'woven goods in stock with the mills on April 1'. It is not clear whether the stocks as given include all uncleared stocks, or only the unsold stocks. The probability is in favour of the former.

(In bales)

Unsold Stocks of Cloth with Member (Bombay) Mills of Millowners' Association, Bombay				Excess or Deficit compared with 1929 (average)	
1922	Dec.	31	...	84,000	+ 31,000
1923	Mar.	31	...	104,500	+ 51,500
	Aug.	31	...	141,000	+ 188,000
	Dec.	31	...	98,000	+ 45,000
1924	Mar.	31	...	63,000	+ 10,000
	Aug.	31	...	66,000	+ 13,000
	Dec.	31	...	75,000	+ 22,000
1925	Mar.	31	...	105,000	+ 52,000
	Aug.	31	...	117,000	+ 64,000
	Dec.	31	...	53,000	+ 64,000
1926	Mar.	31	...	61,000	+ 8,000
	Aug.	31	...	101,000	+ 48,000
	Dec.	31	...	89,000	+ 36,000
1927	Mar.	31	...	72,000	+ 19,000
	Aug.	31	...	73,000	+ 20,000
	Dec.	31	...	105,000	+ 52,000
1928	Mar.	31	...	117,000	+ 64,000
	Aug.	31	...	47,000	— 6,000
	Dec.	31	...	31,000	— 12,000
1929	Mar.	31	...	53,000	
	Aug.	31	...	44,000	— 9,000
	Dec.	31	...	61,000	+ 8,000

Source: Based on data published annually by the Millowners' Association, Bombay, in its Annual Reports.

		Stocks of Cloth with Indian Mills on April 1 of each year		Stocks with Bombay Mills on March 31st (in bales) (unsold)
		Quantity (in m. yds.)	as % of Production	
1926-29	...	270	12.7 %	76,000
1930-33	...	446	16.0 %	88,000
1934-37	...	518	15.3 %	32,000
1938-40	...	748	18.1 %	12,000

Stock-carrying was in the inter-war period, in the main, a function of the distributive agencies, and not of the cloth producer. It is, therefore, probable that the gravity of the stock position throughout the 1930's is only inadequately delineated in the above data.

It is also arguable that Bombay mills had increasingly transferred the responsibility for production decisions to the trade.

Neither the territorial composition of the former, nor the stock of yarns is, however, available. It is probable that these figures do not reveal the gravity of the stock situation fully, because the usual peak of stocks (see Bombay data above) is in August, and not in March or April.

Incidentally, the above data brings out the increasing lack of identity between *per capita* availability of cloth and *per capita* consumption of cloth during the decade preceding the Second World War. The growing excess of stocks implies a lower level of *per capita* consumption than 14.4 yards available *per capita* as estimated in Table A of the preceding chapter, during the last triennium of the inter-war period.

In brief, an increasing volume of stocks became an integral feature of the market situation during the thirties, the 1938-40 levels being nearly 50% above the pre-depression quinquennium.

The state of statistics does not warrant many generalisations on the basis of different varieties of cloth produced, but the following results are significant.²⁴

Annual Average (In m. yds.)	Production of Particular Variety of Cloth		Stocks of Each Variety on April 1st		3 as % of 1	4 as % of 2
	(1)	(2)	(3)	(4)	(5)	(6)
	1926-29	1938-40	1926-29	1938-40		
Chaddars ...	63	71	7.5	16.0	12	23
Dhoties ...	696	1,182	66.0	203.0	9	27
Cambrics & Lawns ...	4	136	0.8	44.0	20	32
Drills & Jeans ...	86	183	9.0	23.0	19	13
Shirtings & T-Cloth ...	561	1,042	56.0	171.0	10	16
Coloured Piecegoods ...	607	917	169.0	198.0	27	22

It stands out from the above that the movements in the aggregative position of stocks were not reproduced in the case of each category of textiles, nor did the rate of expansion in the production of each category necessarily reflect itself in the volume of stocks. Thus the production of dhoties expanded by about 62%, and that of coloured piecegoods by 52% ; but, the proportion of stocks to the production of the former trebled, and of the latter declined by one-fifth.

It is also significant that the diversification of output in the direction of cambrics and lawns yielded a level of stocks that is only slightly less than double the general level of stocks in the period. Over-production, increasing competition—internal as well as external, quantitative as well as qualitative,—sagging prices, and an expanding burden of stocks are, in brief, the main facets of the textile situation during the inter-war period, from the angle of the cloth producer, as well as the yarn producer²⁵, which called into operation many counter-acting tendencies discussed below.

24. Based on the sources mentioned in the preceding footnote.

25. The strain on the yarn producer has, to some extent, been indicated in this and the last chapter, and also in the chapter dealing with the handlooms. A

(a) **Tariff Protection**²⁶.—Although the schemes for protection were never laid down at any one time,²⁷ and protection was extended only after considerable delay,²⁸ the agitation of the mill industry was eminently successful in creating high tariff barriers against imported piecegoods. The measures of tariff protection are summarised in the Table on the next page.

treatment on above lines is not possible because of the limitations imposed by the absence of relevant data. The drastic and rapid decline in the production of reeled yarn in Bombay City, also referred to in other contexts, is submitted below, although in part it represents only the displacement of established suppliers by new suppliers, especially in the coarser yarns.

Reeled Yarn: Counts & Quantities (in million lbs.)

		Total	1-10s	11-20s	21-24s	25-30s	32-36s	37-40s	41-44s	45-50s	51s & above
1926	...	88.6	38.3	39.4	3.7	0.2	0.4	0.3	0.5	0.031	0.06
1928	...	41.4	20.2	15.3	2.1	0.3	0.2	0.3	0.8	0.06	0.3
Change	...	-47.2	-18.1	-24.1	-1.6	+0.1	-0.2		+0.3	+0.03	+0.24

(Adapted from G. S. Hardy, *op. cit.*, p. 36.)

Another pointer in the same direction is provided by the following details of ports of origin of Indian exports of yarn during the years 1935-36 to 1938-39.

Exports of Indian Yarn (in million lbs.)

Port of Export	1935-36	1936-37	1937-38	1938-39
1. Bombay	9.1	11.1	28.1	27.5
2. Other Ports	0.6	1.0	12.0	10.5
3. Total	9.7	12.1	40.1	38.0

(Figures taken from Adarkar B. P., *op. cit.*, p. 176, table XII.)

According to Sir James Doak, the thirties witnessed intense internal competition in the South Indian yarn industry. (*Vide* article in the *Indian Textile Journal*, Golden Jubilee Souvenir, p. 237.)

An additional proof is available of the competitive success of mills in regions other than Bombay Province. 48 m. lbs. of Indian yarn were the estimated consumption of yarn by non-mill producers of Bombay Province in 1937-38. Nearly 44% (21 m. lbs.) of these requirements were secured from mills in regions other than Bombay Province. (*See Report of the Bombay Economic and Industrial Survey Committee*, Vol. I, p. 61.)

26. For detailed surveys of the tariff policies see:

Dey H. L., *The Indian Tariff Problem*, p. 45 *et seq.*

Adarkar B. P., *op. cit.*, p. 157 *et seq.*

The Tariff Board of 1936 also gives an excellent summary.

27. See Madan B. K., *India and Imperial Preference*, p. 165.

28. See *Report of the Indian Fiscal Commission*, 1948-49, Vol. I, pp. 50-1.

—	Tariff Protection (%)	
	British *	Foreign *
1909 to 1913	Nil	
1924	7½	
1926	11	
1929	11	
1930	15	20
1931	25	31½
1935	25	50
1937	20	50
1938	20	50

* Minimum specific duties were also in force from 1930 onwards.

Source: Report of the British Working Party, Cotton, p. 119.

In addition, quota restrictions were imposed on the imports from Japan after January 1, 1934.

In 1932-33,²⁹ the duties paid worked out at 30.4% of the total value of piecegoods imported, yielding a rate of 24% on the value of British imports, and 38.5% against Japanese products.

In 1938-39, on a similar basis, the quantum of protection stood at 31.3% in the aggregate, 20% against British imports, and 50% against Japanese goods.

The high costs³⁰ of these levels of tariff protection to the consumer are a converse of their beneficial influence on the industry.

Tariffs were, in a sentence, one of the most significant mitigating influences in the textile market situation just outlined.

(b) **Wage cutting** was sought to be enforced universally, although it did not meet with the same measure of success in every centre of the industry. Speaking broadly, wages were the stickiest in Bombay, and although high, more flexible in Ahmedabad. In most other centres, not merely were wages lower than Bombay and Ahmedabad, but the rise above pre-war levels was of smaller dimensions.

The details submitted below sum up the situation statistically for a few of the bigger centres, and are based on a study by Prof. S. P. Saxena.³¹

29. Calculated from figures given in the *Review of Trade*.

30. See Dey H. L., op. cit., pp. 83-90. During 1922-29, according to Dr. Dey, the annual burden on the consumer was estimated at Rs. 15 crores, over one-half of which went as 'a bonus to the producers'.

31. See Mukerjee R. K., and Dey H. L. (Editors), *Economic Problems of Modern India*, Vol. II, p. 167. The data is not altogether free from methodological defects, being based on the average earnings of a limited number of major categories of workers.

See also *Report of the Royal Commission on Labour*.

Wage Index	Bombay	Ahmedabad	Madras	Nagpur	Calcutta	Cawnpore
Base: 1909-13	100	100	100	100	100	100
Peak following World War I	182	209	200	196	154	233
Number of Years for which the Peak or Higher Level was Maintained	12	2	4	2	6	1
Wage Index in 1935	163	178	145	142	107	146
Wage Reduction (%) from Post-war Peak	16%	15%	28%	30%	31%	37%

On the whole, it appears that in no established centre of the industry did wage reductions assume proportions identical to the decline in prices. It is equally evident that some reduction in wages was universally characteristic of the industry.

(c) **Reduction in the Work Force, Superior Levels of Labour Deployment, and Capital Intensification.**—Each of these three methods has been utilised in the cotton mill industry during the inter-war period. The extent and significance of these trends has been the greatest for mills in Bombay City, although in general, the operation of these trends has extended to other areas as well.

The details of these movements have been supplied in earlier chapters and, therefore, do not need to be reproduced here.

It is only to be noted that contrary to the view propounded by the Fiscal Commission in 1948-49,³² Indian mills definitely approached a higher stage of technical efficiency, in response to the stresses and strains of the market situation.

(d) **Better Organisation of Sales.**—The developments of the inter-war period did not substantially distract from the domination of wholesalers that was and continued to be characteristic of the industry as a whole.

But the weaknesses of the old selling approaches were realised very acutely during the period.³³ Sales occupied the managements more keenly during this period than ever before,³⁴ and consequently new approaches to sales methods were frequently attempted by the more progressive mills.

³² Report, p. 67.

³³ See the next chapter dealing with the distributive agencies.

³⁴ Of the early days, Sir Cusrow Wadia said, "... those were halcyon times for us all. Steady profits, steady labour, no strikes, and above all, no stocks" (italics ours). See *Reminiscences of an Old Timer, the Indian Textile Journal*, Golden Jubilee Souvenir, p. 34.

The beginnings of direct sales to retailers,³⁵ and to an insignificant (except for the publicity value) extent to consumers,³⁶ were made during this period. Probably, a greater proportion of piecegoods (especially in the new, growing finer section of the industry) was sold under 'mill' stampings than was the case earlier. Increasing attention was also paid to the packing and finishing of piecegoods, and a few important mills adopted new methods of publicity.³⁷

Speaking generally, the net results of the attempts were greater consciousness of the need for publicity on the part of mills, a more vigorous approach to the problems of selling and greater importance attaching to the producer's name from the point of view of the final consumer.

In terms of the diminution of the domination of the wholesalers, it may be repeated, these tendencies have not had any considerable effect.³⁸ Furthermore, it is not improbable that the financially weaker sections of the Indian mill industry were actually subjected during these years to a larger measure of wholesaler domination.

(c) Abortive Attempts at Regulation of Output, and Prices.—Several attempts, which generally failed, were made by Indian millowners to counteract, by collective price and output policies, the keen internal competition.

The earliest of these attempts was the planned merger of the Bombay mills under one company, as a prelude to drastic regulation and specialisation of output, to achieve various economies in the costs of production. After reaching a fairly advanced stage of planning and settlement of preliminary details, the scheme failed to materialise. It was found that the co-operation extended, though substantial, was not enough to ensure the success of a venture of such great dimensions.³⁹

Thereafter, repeated efforts were made to achieve an adequate measure of collective support to schemes for regulating output, and sometimes prices.

35. *Ibid.*, p. 17, article by Sir Ness Wadia. Speaking of Bombay mills, Sir Ness writes: "The selling organisation was thoroughly organised during the 30's and now practically every marketing centre has direct representation from most of the mills."

36. A noted instance was the Delhi Cloth Mills.

37. Exhibition trains, display of publicity posters, postcards inviting comments from consumers—these represent some new modes of publicity adopted by a few mills during the period.

38. Advocating the adoption of rivals' methods of selling, Kasturbhai Labhai, the prominent millowner of Ahmedabad, said: "Crippled by the burden of the defects of our organisations, we have concentrated on the production of each other's sorts, marking each other's marks, and irrespective of the margins of profits, have intensified competition within a limited field." *Report of the Millowners' Association*, Ahmedabad, 1935, pp. 4-5.

39. For details see Cooper R. C., *op. cit.*, pp. 543-45; also *Report of the Tariff Board*, 1932, p. 74.

In 1935, a joint effort was made by the Millowners' Associations of Bombay and Ahmedabad to bring about a restriction of production to single-shift working.⁴⁰ Over 50% of the mills were favourably interested in the proposition,⁴¹ as against the support of 80% of the mills that was stipulated as the minimum for legislative sanction to the scheme to be applied for.

In 1937, Sir Vithal Chandavarkar⁴² pointed out that the "efforts to bring about closer collaboration in the matter of regulation of prices have turned out to be futile".

In 1939,⁴³ joint efforts were again made by the two leading Associations and a circular was addressed to all mills suggesting temporary restriction of production in both the day and night shifts. The response received was inadequate, especially from mills in Bengal, and no voluntary restriction of output was possible (except in Coimbatore).⁴⁴ In the case of at least one of the Millowners' Associations, the President was 'forced' to resign.⁴⁵

In other words, each later phase of the competitive struggle affected larger numbers of the Indian mills, and each attempt at regulating output and/or prices had more representative sponsoring and response. The level of co-operation, however, was never adequate to launch on effective policies for the regulation of prices or output.

The second phase of evolution ending in 1940, it may then be said, constitutes the most crucial phase in the growth of the mill industry. In an effort to solve the problems facing the industry, it diversified production patterns, which also extended the range of its competitive contacts with the foreign producers, as well as the handlooms. Large shifts in the competitive balance between mills in various regions were also discerned, particularly in the spinning of coarser yarns. Tariff protection was made available in a substantial measure, although restrictive covenants, mooted from time to time, with respect to output and prices could not be operated. A higher general level of technical efficiency was also discernible.

Notwithstanding the measures outlined above, the problems of marketing remained increasingly insistent, with the thirties recording an unending series of stock crises. The intensity of competition deepened, both territorially as well as in terms of the types of fabric produced, resulting in a more conscious and positive organisational

40. See *Report of the Millowners' Association, Ahmedabad*, 1935, pp. 4-5.

41. Vide the *International Cotton Bulletin*, April 1935, pp. 392-3.

42. Quoted by Prof. M. P. Gandhi, in the *Indian Cotton Textile Industry Annual*, 1937, p. 167.

43. *Ibid.*, 1939 Annual, pp. 67-8.

44. *The Indian Textile Journal*, 1938-39, p. 430-1.

45. *Ibid.*, p. 460.

approach to the problems of selling. Simultaneously, the association of a fabric with the producing agency was fostered in the eyes of the final consumers.

3. The Latest Phase of Evolution.—In the years after 1939, the state of a seller's market slowly emerged, and continued, speaking generally, upto 1951. The onset was gradual and the climax was probably touched in 1946 or 1947. Later years recorded a slackening of the tempo, although 1950-51 was an unusually profitable year for the mill industry as a consequence of the boom in exports. 1951-52 records a sharp reversal of these tendencies.

The general evolution of scarcity conditions during the war years and its causes are well known, and do not need to be elaborated.

The main factors at work were : (a) the diversion of productive capacity to the satisfaction of war and non-civilian uses, reaching its peak in 1943, and remaining at a very high level for many years later ; (b) the consequent scarcity of textiles for civilian consumption was made more acute by consumer hoarding, and mal-practices by large sections of the mill industry as well as the trade ; (c) the strong, general inflationary pressures operating in the Indian economy during the war and later years, and difficulties associated with the failure of the transportation system to function effectively in regard to civilian needs, and the failings of the governmental machinery set up to control the cotton textile industry.

There is one aspect of the cotton textile picture during these years which has not always been adequately appreciated—the cessation of the flow of imported textiles. Two consequences flowed from this abrupt gap in the supply of textiles. Firstly, cotton producers became the mainstay of supply even in the case of the demand for non-cotton textiles. Secondly, since a large proportion of the imported piecegoods was comprised of the finer varieties, and constituted a more important proportion of the total internal supply of these varieties, the contraction of supply therein was greater than is indicated by the aggregative data. The general profitability of textile manufactures as well as governmental restrictions and the difficulties of converting machinery to the manufacture of finer yarns, did not actively support immediate expansion in the production of these textiles. The pressure on the side of demand was, however, manifestly indicative of the prospective shift of the production structure, once the counteracting factors lost some of their sharp edge. The rise in the average count of yarn spun, and the manifold increase in the post-war years in the number of spindles spinning fine yarn have already been referred to. These changes have been in response to this fundamental tendency which has been operative since the beginning of the forties.

To place matters in another perspective, the changes in the production structure in the years after 1939 and upto 1951 are not a result of the type of pressures under which the industry had functioned in the thirties. There was, speaking broadly, a shift in accordance with the final demand situation, but demand had lost a large part of the effectiveness it had as a lever which controlled production closely. This shift in the production patterns is unlike the pre-war position. In the table submitted below, the maximum is expressed as a percentage of the minimum production of the same variety in any year in each of the two periods, pre-war and post-war :—

Grey & Bleached Piecegoods	Maximum Annual Production as % of Minimum Annual Production	
	1935-36 to 1938-39	1947-48 to 1950-51
A—Chaddars	125	310
Dhoties	130	420
Drills & Jeans	110	150
Cambries & Lawns	155	105
Shirtings & Longcloth	130	110
T. Cloth & Domestics	125	125
B—Coloured Piecegoods	115	140
C—Total Piecegoods	120	120

The closer correspondence of the aggregative increase in the pre-war period with the movements in the component categories is in contrast to the post-war period, wherein sharp deviations from the aggregative trends are visible in the broad categories.

Similar conclusions about the broad shift of the production structure in accordance with final demand patterns emerge from an examination of the production figures in terms of the warp count used in the manufacture of cloth. The data is supplied below :—

(In million yards)

Warp count used	Production of Cloth	
	1945	1950
Below 36s	3,895	2,202
36s to 47s	540	1,200
Above 48s	252	261

Sources: (1) Government of Madras, Final Report of the Industrial Planning Committee, 1948, p. 89.
(2) Official Statistics for 1950 data.

Partly, the above table discloses the response of the industry to the market situation of the war and later years in relation to finer textiles ; partly, the same data reflects the growing scarcity of coarser cotton textiles, and the failure of the industry to be in balance with the consumption patterns, since the latter could hardly have altered in the magnitude indicated by the above figures against the consumption of coarser textiles.

These changes in the production structures explain (i) the general availability, at stamped prices, of fine and superfine textiles in 1951 and 1952 ; and (ii) the soaring premiums on coarser textiles and their general non-availability in the open market almost upto June 1952.

Incidentally it is to be noted that the latter circumstance has induced, to some extent, the operation of opposite tendencies.

Textile Commissioner's Classification of Cloth			Cloth Production in the State of Bombay (Monthly Average or Calendar Month)		Difference
			1950-51	October 1951	
Coarse	...	...	13	11	} + 49 m. yds.
Medium	...	...	67	118	
Fine	...	...	100	78	} - 25 m. yds.
Superfine	...	...	22	19	

Source: The Bulletin of the Bureau of Economics and Statistics, October 1951.

The production adjustments, it may be noted, are not small. In the case of coarser textiles, they imply a 50% increase in the rate of production, and in the case of finer textiles a decline of nearly 25% in the rate of production. Inasmuch as decisions of this character involve sizeable financial costs, unlike decisions to change from one variety to another, these figures may safely be regarded as reflective of the greater importance of demand presently as a factor in regulating production, than was the case only two years back.

In fine, production patterns have been highly unstable in recent years. Notwithstanding the former, large-scale conversion of textile equipment to the production of finer yarns and cloths has taken place in the post-war years. It is also clear that to some extent this trend has been overdone, requiring opposite, corrective tendencies to come into operation. The latter, it is submitted, constitute *prima facie* evidence of the gradual reversion of the textile market to a condition of normalcy. The succeeding paragraphs bring out the extent to which supporting evidence renders this interpretation feasible.

The pre-war supplies of cotton textiles in India worked out to a little more than 14 yards *per capita*.⁴⁶ The upward trend in stocks throughout the thirties was more pronounced in the years just preceding the War, and it is not unreasonable to argue that the actual level of *per capita* consumption was nearer 13 yards, the pre-depression level of *per capita* availability.

In 1948 to 1950, apart from the shifts in the component categories of total supply, *per capita* supplies rose to 12.7 to 13.0 yards.

In 1951-52, there has been a further increase in the availability of cotton piecegoods, partly because output has increased, and more important, because exports have declined from 1,268 m. yds. in 1950-51 to approximately 420 m. yds. in 1951-52. The former represents an addition of nearly 450 m. yds., and the latter an addition of another 800 m. yds. to the internal supply of cotton textiles, the *per capita* increase being of the order of 3.5 yards in the case of mill goods alone.

As compared to the pre-war *per capita* supply, namely 14 yards, the *per capita* supplies in 1951-52 may be placed between 16.5 to 17 yards. As compared to the immediately preceding triennium, 1948 to 1950, *per capita* supplies in 1951-52 are higher by nearly 30%.

The 1951-52 levels of production, taken together with the great decline in export markets, crystallise the final emergence of a market where buyers once again resume supremacy and competition assumes a keener edge. Deprived of the support of inflationary general conditions, cotton textile markets face the problem of adjusting the real levels of consumption substantially higher, in a short period of time, to match a larger volume of internal supply. It is not possible to dogmatise on the point, but it is doubtful that general economic progress in the last decade or so has been sufficient to consistently support the level of *per capita* consumption 20% above the pre-war supplies of cotton piecegoods, which were themselves in excess of actual consumption.

The magnitude of the adjustment required may be appreciated from another angle as well. A *per capita* rise in availability of similar dimensions—3.5 yards—took nearly forty years to crystallise as a permanent feature.⁴⁷ It is now imperative that a similar upward shift be made in a period that may only be a tiny fraction of the time taken for the early achievement.

Stocks.—The volume of stocks with mills reflects the difficulties of making these adjustments. The data submitted below brings together the relevant details :

46. See Table A in the preceding chapter.

47. *Ibid.*

Mill Stocks at or about the end of the Period

1946		1947		1950		January 1951		December 1951	
Yarn	Cloth	Yarn	Cloth	Yarn	Cloth	Yarn	Cloth	Yarn	Cloth
43	260	48	231	41	282	42	262	59	423

Source: Monthly Abstract of Statistics, February 1952.

It is clear from the above table that the level of stocks at the end of 1951 was nearly 25% higher in the case of yarn, and 65% higher in the case of cloth than the level of stocks in the seller's market of 1946 or 1947. It is equally evident that the growth in stocks has taken place in the course of 1951.

The 'March Slump' in the prices of textiles,⁴⁸ apart from the extent to which it reflects general tendencies in the economy, is thus an extrapolation of the more fundamental trends at work for over a year.

To conclude, the trends in the total supply position, and the consequential changes in the stock and profit positions of the mill industry, bring to the fore several problems that were crucial in the last years of the inter-war period. The partition of India has aggravated the problems by rendering available for internal supplies those piecegoods which formerly commanded an exclusive market in those areas. The quantity thrown on the Indian market, as now politically delimited, is probably of the order of 1,000 m. yards a year, or roughly a quarter of the annual mill production.

In brief, the seller's market characteristic of the years upto 1951 has ceased to exist. Competition has assumed a keener edge, mildly reminiscent of the thirties. The structural conditions manifested in the present relative positions of each supplier in the cloth market (especially the growth of the powerloom industry with nearly 35,000 looms) and the aggregative relation between total supply and effective normal Indian demand, render the economic balance of the mill industry extremely delicate, and easily liable to be unfavourably altered.

48. The heavy slump in textile prices is all the more serious when it is appreciated that the industry then had a strong case for an upward revision of cloth prices, fixed under the Tariff Board formula, apart from the question of the exact measure of such a change. The paradox in the situation may be put thus: if the marketing of cotton textiles at 1952 prices (notwithstanding a drastic relaxation of the control on distribution), is not uniformly possible for the industry, how will it be possible at higher price levels, either? The rising volume of stocks throughout 1951 and possibly upto December 1952 is definitely against a complacent view of the position. Briefly, costs may warrant higher final prices. But, does the state of final demand sanction them?

CHAPTER VII

THE ROLE OF THE DISTRIBUTIVE AGENCIES

The role of the distributive agencies in the markets for cotton textile products is not easy to assess in detail, although the broad contours of their relationship with mills are reasonably clear. The present brief chapter is directed only at a delineation in these narrow terms, the propositions established being essentially qualitative rather than quantitative in character. Attention is mainly directed to the wholesale trade. The treatment of the retail trade is unavoidably sketchy.¹

A. THE WHOLESALE TRADE

General Review.—The wholesale trade in cloth was regionally concentrated at the beginning of the twentieth century, and upto 1914 in Calcutta, the chief port for importing cotton piecegoods, and Bombay City, the major centre of the production of coarser types of piecegoods and yarn.

With the later shifts in the relative importance of various suppliers in the Indian market, Calcutta became slightly less important and Bombay slightly more important as a trade centre. The growth of mills outside Bombay, especially when the latter were supplying specific regional requirements, worked to the detriment of Bombay's proportional importance, although its significance as a central market which determined prices for Indian cloth was never affected.

The growth of indigenous production, and its increasing diversification into fabrics formerly produced only by the foreign suppliers, placed the mills of India in keener competition with imports on the one hand, handlooms on the other, and amongst themselves. In other words, the wholesale trader was enabled, particularly during the inter-war period, to buy his requirements from a larger number of producing units, spread out regionally all over India and the rest of the world. The textile products of Italy, France and China were thus imported into India, besides the produce of Japan and the United Kingdom. Likewise, the products of South Indian and Central Indian mills were sold in Bombay State in direct competition with the local output. The products of powerlooms were likewise actively sponsored, although before the Second World War the quantitative significance of the trend was small. Supported by the weak bargaining position of the mills, and the possibility of setting up one competitor against another, the wholesale trade was

1. The propositions brought together in this chapter are mainly the result of personal conversation and observation. The main principles apply to the yarn markets, which have not been treated separately.

actively assisted by the basic trends in production and total supply during the inter-war period.

The tendency of prices to decline, of course, affected the trade, and probably more seriously than it did the mills. It was involved in losses, and profits were small in relation to the risks involved, resulting in more cautious buying on their part, and the accumulation of stocks with them," in larger quantities than mills. But it is evident that the unwillingness and the caution of the wholesale buyer made him a more difficult customer for the mills who had to be pleased in view of the easy supply position of the inter-war years.

This, speaking generally, was the position of the wholesaler *vis-a-vis* the producer, upto 1940. The later years saw a gradual reversal of the earlier trends : the supply position was no longer easy, the carrying of stocks not only did not involve risks of losses but afforded almost certain prospects of 'capital' appreciations, and sales ceased to be a problem even for the most inefficient mills. Wholesalers were deprived of most of their bargaining strength, and their operations came to be confined to the limits placed by the controls on distribution. Often they were enabled to do business only on sufferance.

The re-emergence of more normal market conditions has found the distribution system instituted under the controls unable to cope up with the problems of disposing and holding output. Once again, therefore, the tasks of distribution have generally reverted to normal trade channels. In the present early phase it is not possible to ascertain the competitive strength of their position as against the producers, and only the history of the years to come can show how far the pre-war orientation of textile markets is restored.

Functional Role in a Normal Market.—Under normal market conditions, the functions of the wholesalers devolve into the following : (i) acting as the intermediary between the retail trade on the one hand, and the mills and other suppliers, on the other ; (ii) acting as the main channels from which new production decisions, in the first instance, emerge ; (iii) determining, to some extent, the price levels of the final products in general and the relative premiums on the varieties of individual mills in particular ; and, (iv) the holding of stocks, in particular, and directly and indirectly financing the production of piecegoods.

Wholesalers as intermediaries supply to the semi-wholesale and retail trades their requirements, in small and desired assortments, at the proper times, on suitable terms of financial accommodation. The combination of wholesaling and retailing is not common with the bigger

2. For stocks of cloth to be maintained over a period of five or six years was not uncommon before the War, according to well-informed opinion in the trade.

wholesalers, although the district wholesaler is usually a retailer as well, especially in relation to the smaller retail traders.

A feature peculiar to the wholesale trade in cloth in Bombay City before the War may be mentioned in this connection. A large measure of specialisation in the cloth trade obtained amongst the few hundred traders located in the Moolji Jetha Market. The basis of this specialisation was two-fold : variety of fabric, for example, coatings, shirtings, dhoties, etc., and the price range.

In Ahmedabad, wholesaling never assumed the high degree of specialisation obtaining in Bombay, partly at least because mills were themselves willing to handle small orders, in wider assortments.

The congregation of wholesaling offices in a street or few streets ensured wide publicity for the details—price, quantity, delivery dates, etc. of trading, and therefore, a greater uniformity in the prices realised by the mills (when other counteracting conditions did not intervene), or charged to the other categories in the distributive chain.

By bringing together supplies from different mills and different suppliers, the wholesale trade ensured before the War, by trading on the basis of large turnovers at low rates of profit, that prices were more uniform, and passed on the advantages of lower costs immediately in the shape of lower prices to the retail trade. Competition within the trade altogether precluded the possibility of the strong bargaining position in relation to mills being utilised to the detriment of the final consumer.

For the wholesalers to act as the **originators of new production decisions**, was a natural corollary of their strong bargaining position. The practice of forward contracts, prevalent more widely in mills in Bombay City than in Ahmedabad mills, was one manifestation of this tendency. Another such indication lies in the close connection of the wholesalers with the production departments of many mills, where they could at times change production schedules in direct consultation with the weaving master.

It is beyond doubt that the contact of mills with the production alignments of their competitors was maintained mainly through these agencies.

It is likewise beyond doubt that the wholesalers sponsored keen competition, based on the debasement of qualities and the advantages of superior finishing on poor material. This also resulted in a multiplicity of small orders for a mill company, with the result that at the beginning of the Second World War Indian mills were reported to be producing over 60,000 different varieties of cloth.

The existence of a substantial independent processing industry is also evidence of the wholesalers undertaking certain stages in the production of cloth for the final consumer.

In brief, in relation to the mills, the wholesalers were the most important source from which suggestions and orders for the production of new types of fabrics emanated, although it also presumably led to the atomising of orders, debasement of qualities and the production of a multiplicity of varieties.

Wholesalers, as price setters, in general, had fair but limited importance, although the continued tendency of prices to fall gave their actions, as such, greater significance.

The importance of wholesalers as price-setters was both more effective, and more permanent in the context of individual mills and their particular products. Certain varieties of certain mills tended to be accepted as the standard, other mills obtaining usually varying lower amounts by way of prices, although occasionally premiums would be quoted in the same way in relation to the variety accepted as standard.

A mill, once dubbed by the trade, as entitled to a lower value, had a hard task in approaching a higher value in relation to the price of the standard. Undoubtedly, the standards once established were not perpetual, but it is true to say that they were amenable only to slow change. The early efforts of mills at weaving better fabrics were often thwarted by the prevalence of this mentality in the distributing agency.

The influence of the wholesalers in this direction implied that the prices realised by a mill for its output depended, to a considerable extent, on the trade's estimate, which had traditional rather than the sanction of detailed expert examination behind it. These tendencies were particularly discouraging in their effects on the smaller and new mills.

In other words, except to the extent to which the 'standard' established by the trade was fair, the prices of cloth fetched by individual mills were not always correlated to the quality of the output.

Wholesalers, as stock holders, carried the burden of maintaining stability in the cloth market.

Apart from the other factors at work, which complicated the tasks of stock-holding and made them more risky, this appears to be the most significant function of the wholesaler.

This significance is reflected, firstly, in the greater importance of wholesalers as stockholders when compared to the mills, and secondly, in relation to the 'seasonality' characteristic of the demand of the final consumer.

The statistical evidence for the first proposition is not easy to secure, although partial proof is available.³ Thus in 1937, a comparatively less difficult year from the point of view of stocks, on an average 10,000 bales remained unsold with Bombay mills, against 55,000 bales held by the mills on account of sales made but undelivered. In 1938, a more difficult year from the point of view of stocks, the figures were 4,000 and 84,000 bales respectively.

In other words, the portion of 'trade' stocks with mills alone amounted in 1937 to 5.5 and in 1938 to 6.0 times the unsold stocks of the mills. The total stocks of the trade before the war, in relation to Bombay mills, were, therefore, considerably higher than indicated by the above data.

The financing aspects of the activity of wholesalers are partially dealt with in the chapter 'Financial Aspects'.

To sum up, the cotton mills of India, upto 1939, constituted an industry oriented to a market structure that was dominated by the wholesaling interests.

B. THE RETAIL TRADE

The retail cloth trade of India is organised mainly in unit shops, the bulk of which do not have more than two employees. A substantial number of these shops, apart from help of the 'domestic servant' type, is run by the members of a family.

The proportion of bigger shops tends to decline rapidly in towns with a small population, and a similar downward tendency is observable in the matter of the general facilities for shopping offered to or demanded by the consumer.

In the smallest villages, the cloth dealer is usually non-existent; in the bigger villages, a cloth shop or two exists, but a substantial portion of purchases is effected in the shops of nearby bigger towns.

In all towns with population above a certain minimum level (say, 5,000), cloth trading is important, and until recently, tended to congregate in a single street. Cloth shops generally do not sell other articles, and usually exclude even readymade garments, hosiery products, and rayon piecegoods. This tendency to confine operations mainly to a range of cotton fabrics in usual demand is the least strong in certain sections of shops in the biggest towns.

In a way symptomatic of the small scale of operations in retail cloth selling is the presence of a very large number of hawkers and

3. Based on data from the Millowners' Association, Annual Report, 1938.

peddlars. The latter sometimes, especially in the Punjab, cover a large number of villages in the routine of their operations.

Retail traders, besides employing their own finance, acquire in a normal market considerable quantities of piecegoods on credit.

A more remarkable feature of the retail trade is its pattern of seasonal peaks and troughs, which to some extent varies from one part of the country to another. To this seasonality in demand, the retail trader adjusts his own purchasing programme, which again brings out the importance of wholesalers as stock-holders. Broadly speaking, the months of October to December, and March to May, represent the seasonal peaks ; July and August represent the deepest seasonal trough. Traders' buying, by a small margin of time, precedes the seasonal up-swings in final demand.

It is generally agreed that retail trading presently is not identical with its pre-war patterns, apart from the worst years of cloth scarcity. The catalogue of changes enumerated below is not exhaustive, and the order of presentation is not indicative of the order of importance of each change. It is, however, felt that the changes enumerated below are among the more permanent ones :—

- (i) The bigger retail trading shop is more common presently.
- (ii) It is no longer imperative that a shop to succeed be located in the bazaar. Proximity of shops to residential areas is presently becoming discernible in the bigger cities.
- (iii) 'Fixed' prices are more common.
- (iv) An increasing number of shops have the sale of cloth as a sideline ; likewise, cloth shops selling other articles are found more frequently.
- (v) The combination of tailoring departments and the sale of cloth is widespread.
- (vi) The sale of cloth made up as garments (other than saris and dhoties) has, in the main, affected two categories of customers. The lower income groups—industrial workers, etc.—are catered to by one type of shops. The higher income groups, insisting upon high 'fashion' value and specialised treatment of the garment (e.g. 'trubensised' collars for shirts) are catered to by another entirely different class of shops.

- (vii) Shops owned by mills have increased in number, but it remains to be seen whether they have acquired any sizeable standing, independent of the scarcity conditions, which have largely enabled their growth.

The retail trade, as now existing, is one important aspect of the structure of textile marketing, about which information is scanty. In view of the diversity of dress habits, and the dispersion of shops in different parts of the country, a comprehensive census inquiry alone can yield adequate data on pricing policies, profit margins and buying policies, three matters which affect the cotton textile industry, as a whole, vitally.

CHAPTER VIII

FINAL DEMAND PATTERNS

The present chapter aims at filling in some major gaps in the preceding analyses of different aspects of the structure of textile markets.

The main propositions established are :

- (a) Prior to 1939, India constituted an expanding market for cloth as reflected in figures of total supply and *per capita* availability of cotton textiles.
- (b) A gradual 'universalisation' has been characteristic of the Indian market.
- (c) The emergence of a number of factors that are making the demand for cotton textile products more variable and less stable.
- (d) Finally, the strength in certain sectors of the cotton textile market of Rayon, as a competing fibre.

Each of these propositions is discussed, in brief, in the pages to follow.

A. INDIA—AN EXPANDING MARKET FOR FABRICS¹

The Indian market for cloth has been, over a period of time, expanding. In the triennium preceding the twentieth century, the total supply of cloth in the home market was 3,202 m. yards. Forty years later, in the pre-war triennium the supply was higher by nearly 2,300 m. yards, or 70% above the level in the first period. That this 'excess' was represented partly by a higher level of stocks we have already noticed.

Notwithstanding the latter consideration, it cannot be disputed that the level of *per capita* consumption was substantially higher as well. Treating the availability of supplies for the present limited purpose as equivalent to consumption, the *per capita* increase amounts to 3.4 yards, or 30% over the level at the end of the nineteenth century.

It may be noted, however, that the rate of increase in the *per capita* consumption was lower, probably after the First World War. Thus, whereas between 1896-7 to 1898-9 and 1906-7 to 1908-9, *per capita* consumption rose by 1.6 yards, between 1906-07 to 1908-09 and 1926-27 to 1928-29, it increased by less than half a yard. The increase in the subsequent decade, of 1.4 yards, is obviously exaggerated, and was probably achieved, to the extent to which it does represent actual con-

1. The statistical data is from Table A of the Chapter: the Structure of Markets: Basic Facts.

sumption, only at the cost of the financial stability of the industry in general.

The years 1948 to 1950 are not a very fair comparison from this point of view, but the details of the supply position in 1951-52 probably reflect an excess of supply over consumption and may not be at all fairly regarded as *per capita* consumption.

Anyway, the size of the fabric market in India has been, in the main, hitherto responding to two influences—one, the increase in population, and two, the support afforded by the rate of general economic progress to higher levels of *per capita* consumption. The first factor alone, on the assumption that population will rise between 1951 and 1961 at the same rate at which it grew between 1941 and 1951 calls for extra supplies of nearly 750 m. yards a year in and after 1961. If general economic progress enables a further upward shift in *per capita* consumption, the requirements would be even higher.

In the light of these comparatively long-term considerations the cotton mills of India, as well as other sections of the textile industry (except handlooms), have an assured future, though probably not equally profitable prospects in the immediate present and future.

B. GRADUAL 'UNIVERSALISATION' OF THE INDIAN MARKET

Indian dress patterns upto the beginning of the First World War had a strong regional bias that was also traditional and permanent in character within a region. Apart from the distinctions observable in any society as a result of one person possessing more wealth than another, a hierarchical society established dress patterns on a group basis.

These older dress patterns do persist, and are of significance. But no longer are they backed by the old strength of social sanction, and for several sections of the people, whose importance as consumers of cotton textiles is greater than the proportion of their numbers to the total population indicates, they have ceased to be of any consequence. The various forces responsible for this trend, and its another allied result, namely instability in demand patterns, are treated in a later section of this chapter. It is important, however, to note that one major outcome of their operation has been more universal acceptance, although not to the same extent adoption, of certain modes of dress.

Thus, the most individualistic and diverse item of dress, the headgear or the pugree,² has vanished altogether, yielding place to a more universal garment, the cloth cap, when it is not a bare head.

2. See Ghurye G. S., *Indian Costume*, p. 399, for photographs of twenty-two types of Indian headgear.

South Indians, to cite another illustration, are no longer exclusive consumers of short length dhoties, which were usually grey. The bleached dhoti of longer length, popular with the middle class of the rest of India, is now acceptable, and even preferred by them.

The so-called 'Bengali' mode of draping the saree furnishes another example. Universally popular among the younger urban ladies, it has also found acceptance in the higher age-groups.

The popularity of the Western modes of dress and of the Indian modes of male attire evolving out of the satyagraha movements, furnish another set of illustrations.

The extension of this list of illustrations is possible to a variety of other items, but the details probably are more suitably reserved for a sociological study.

The central fact that requires to be stressed is that vast numbers of customers, mainly in the urban areas, are now willing to accept some form of dress, which does not necessarily have a narrow regional bias.

In terms of competitive alignments within the industry this has implications for both the mechanised and the handicraft sectors. For both, it implies the possibility of producing fabrics that have an extra-regional market, a national market. For the latter, it definitely implies a loss of consumer following established by centuries of tradition. In general, it connotes a further extension of the range of possible competitive contacts between mills in different regions.

C. FACTORS MAKING FOR INSTABILITY IN THE DEMAND FOR CLOTH

A large number of forces are at work in the Indian community, which are tending to bring greater instability in the demand for cloth. It is not possible unfortunately to separate and quantify the effects of each of these factors. A brief enumeration is all that is attempted in this section.

The progress of literacy and higher education have had a surprising amount of influence on social views about the desirability or otherwise of particular modes of dress. Apart from providing the means to perceive new changes more quickly, progress in the above direction has facilitated the use of several media of advertising, the spread of the habit of reading newspapers and periodicals and the more recent growth of fashion and women's magazines.

The latter type of 'broadcasting' influences have found an ideal medium in the film industry. From a small industry catering to an

exclusive social class,³ the films have come to cater to an yearly attendance of 200 million.⁴ In recent years, after 1936, the film industry adopted high-pressure methods of selling to create the 'star' system,⁵ making lavish use of the details of the modes of dress of the actresses.⁶ It has exercised perceptible influence on women's fashions, although as Dr. Miss Shah points out,⁷ the importance is not as pervasive as in America.

The growth of Christianity to be India's third biggest religion has strengthened the tendencies to break away from traditional patterns of dress, both in the case of men and women. In the case of women, however, the inducement to change has been less pervasive than in the case of men. In regional terms, the South Indian areas are less affected by the adoption of Western modes of dress than other parts of the country.

Another force of importance has been the process of urbanisation, which has raised the proportion of urban to total population from 9% in 1881,⁸ to 18% in 1951.⁹ Urbanisation has brought larger numbers of people, within as well as beyond these areas proper, into contact with new dress patterns and rendered it possible to direct the use of various media of publicity at larger aggregates of humanity. The generally higher level of *per capita* urban incomes, as compared to the rural areas, makes this trend even more significant. Likewise, the growth of new urban areas also extends the degree of urban influence on the demand in proximate rural regions. The accepted respectability of metropolitan dress patterns, and their imitative spread in other regions, is a distinct but cognate development of significance.

The army has also been instrumental in bringing to vast numbers of people the experience of adopting new modes of dress. Two World Wars have seen more than seven million people join the armed forces, or allied branches. They have enabled them to experience and observe different dress patterns, and introduce some of the changes in their own families. The Punjab is, of course, the main area of the operation of these influences.

The political movements of the thirties under the leadership of Mahatma Gandhi, have inspired informal and simple dress patterns which have found general acceptance.

A major change has been operating in the Indian social structure for some time now, and continues to operate at an accelerating pace.

3. *The Indian Film*, pp. 27 and 42.

4. *Ibid.*, p. 89.

5. *Ibid.*, p. 140.

6. *Ibid.*, p. 143.

7. *Ibid.*, p. 162. Dr. Shah also supplies a few examples.

8. See Davis Kingsley, *The Population of India & Pakistan*, p. 127.

9. See Press Release by the Census Authorities, reported in the *Sunday Standard*, June 1, 1952.

The women of India, supported by the crumbling of the caste system and the disintegration of the joint family, have been becoming more and more fashion-conscious, especially in the urban areas. A larger measure of 'freedom' has provided them with more occasions which demand more attention to dress, while films have provided the ideals to be simulated in matters of dress. The spread of female education, especially at the college level, has likewise provided an extension of the focal points of group contact from which the imitative spread of fashions travels far beyond the lady students of Indian colleges. A role that is more pervasively being assumed by women is their growing importance as direct purchasers of family requirements in general.

The exigencies of the war years of scarcity have also had a more permanent influence. Formal dress patterns have lost a part of their traditional strength, offering scope for trying out different, less elaborate styles of attire.

On the side of supply, the additions to the finishing equipments have materially added to the capacity of the producers to adjust to a change in demand, as well as to create a new demand. The growth of an independent processing industry also affords to agencies other than the producers, the opportunity to initiate similar changes. The net results of this position have yet to finally emerge in a normal market, but their potential for instability is evident.

To conclude, on the side of demand as well as supply, various forces have made themselves felt, although not necessarily in the same direction. As a result, established patterns of dress, sanctioned by tradition and supported by habit, are increasingly liable to variation. The strength of these tendencies is greater, and probably of more permanent significance, in respect of feminine attire.

1D. RAYON : A NEW COMPETITOR

Appearing as a cheap substitute for silk, rayon technology has steadfastly progressed enabling the fibre to become more versatile, and at the same time securing a price advantage over other competing fibres. In 1920, the price of rayon compared with the prices of raw silk. By 1933, it was half as costly as raw silk and cheaper than raw wool. A decade later it cost less than cotton yarn, and in 1947, according to the World Fiber Survey,¹⁰ raw cotton cost 12% more than staple fibre. The possibility of using it in mixture with other fibres, as well as the stability in its prices as compared to raw cotton, are additional advantages from the point of view of the fabric producer.¹¹

10. Issued by the Food and Agriculture Organisation, p. 39.

11. Bendure, Z., *America's Fabrics*. See the Chapter dealing with Rayon, p. 164 *et seq.*

Supported by the decline in relative costs, rayon appeared in the Indian market for the first time in the early twenties, and made steady progress in the later years, although the tariff walls of the later thirties thwarted its progress. The war years recorded a sharp decline in the Indian imports of rayon, yarn as well as fabric, but in the post-war period imports have steadily grown in the aggregate. These trends are summed up in the brief table following :

Indian Imports of Rayon

Period (Annual average)				Yarn (in m. lbs.)	Staple Fibre and Yarn (in m. lbs.)	Fabrics (in m. yards)
1920-21	...	...	...	Nil	Nil	Nil
1921-22	...	...	...	...	...	1
1926-29	...	...	...	5	...	54
1936-39	...	...	...	22	...	75
1949-50	...	...	...	37	11	7

It is clear from the above table that India has extended its consumption of foreign raw materials rather than the final foreign product, in the post-war years. Roughly equating a lb. of filament yarn or staple fibre to 5 yards of fabric, the volume of the annual Indian intake of rayon fabrics has risen from 79 m. yds. in 1926-29 to 185 m. yds. in 1936-39, and 247 m. yds. in 1949-52.

As compared to the total production of mills, rayon consumption represents an addition of only about 5% to the total cotton cloth supply. The seriousness of rayon as a competitor is appraised better *vis-a-vis* the production of superior types of cloth, other than dhoties, which aggregates to 1,000 m. yards. Inasmuch as the production of rayon fabrics is presently confined, in the main, to sarees and other women's requirements, and to shirtings for men, its competitive significance is greater in the case of these varieties, wherein it certainly forms a considerably larger proportion of the production of mills.

It is clear that in the future the range of the points of competitive contact between the producers of rayon and cotton fabrics will get extended. This extension of the competitive range will obviously have more important consequences for the finer section of the mill industry, and for the saree-weaving centres, like Ahmedabad.

It may be noted that the rayon weaving industry today has an important advantage in the matter of wage payments against mills in the same region. Thus, in Bombay City, whereas mills paid, on an average, Rs. 96 as the monthly wage, rayon weaving factories paid only

Rs. 88.¹² The larger proportion of employees receiving a lower wage in the spinning section of the mills yields an overall average for the mill industry that is not fully representative of the average level of wages in the weaving sections of mills, which is the appropriate level to be selected for comparison. As a result, it is reasonable to assert that the rayon weaving mills in Bombay have an advantage in wage costs alone of at least 20%, over the cotton mills. Implicit in the above is the fact that the adoption of rayon weaving by cotton mills must necessarily involve a higher level of comparative costs for the latter.

The close pricespread between the declared export values per yard of rayon fabrics and cotton piecegoods may be seen in the data supplied below :—

Declared Value per Yard of Exported Fabrics

		Cotton			Rayon
		Grey	Bleached	Coloured	
		Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
January 1950	...	0 10 11	0 12 7	0 14 11	1 1 0
January 1951	...	0 12 1	0 15 3	1 0 1	1 8 8
January 1952	...	1 1 7	1 0 5	1 5 10	1 4 10

Source: Accounts relating to the Foreign Sea and Airborne Trade of India.

In general, it will be noticed that rayon prices have recorded a smaller rise, with the result that price differentials between cotton and rayon fabrics have narrowed substantially, especially between January 1951 and January 1952. In the former month, the price of a yard of rayon fabric was 208% of the price of a yard of grey cotton piecegoods, 156% of the price of coloured cotton piecegoods and 166% of the price of bleached cotton piecegoods. A year later, the percentages were 123, 95 and 131 respectively.¹³

In brief, the aggregative trends in rayon consumption are disquieting, particularly from the point of view of the finer section of the mill industry. The range of competitive contacts is selective presently, and very intensive. It is likely to extend further in the near future. This competition is also strongly reflected in relative prices, which were illustrated with reference to declared export values. A lower level of labour costs furthermore favours the rayon weaving industry against cotton mills.

12. See 1950, *I.C.R.* (Bombay), p. 837.

13. The competition between rayon and Indian cotton fabrics is not confined to Indian boundaries. In 1951, the Indian Trade Representative in Thailand reported the success of Japanese rayon fabrics against Indian cotton piecegoods, vide the *Journal of Industry and Trade*, September 1951, p. 47.

E. SUMMING UP

India has hitherto been an expanding market for cotton textiles, although the contribution of a *per capita* increase in consumption to bringing about this position has not always been uniform. There appears to be little doubt, that apart from the position in the short period, the earlier tendencies will continue to operate in the foreseeable future.

Simultaneously, competition is likely to become keener. Universalisation of the market, as we call it, the emergence of a number of factors which are impinging upon the stability of final demand patterns, and the growth in the popularity of rayon as an apparel fabric, all these point to the same conclusion.

Final demand patterns, we conclude, are no longer conducive to the same measure of industrial stability.

PART THREE

FINANCE

CHAPTER IX

FINANCIAL ASPECTS

The preceding chapters were devoted mainly to a consideration of various physical or real indices of cotton mill operation. In the present chapter an appraisal is sought to be made of some more important aspects of mill finance. The sources and quantum of capital requirements, the relationship between the scale of operations and the capacity to make profits, and a review of the major trends in the field of financial management constitute the aspects marked out for study.

The complex financial patterns, characterised by remarkable deviations from the general picture and instability in time of the various magnitudes involved, are made more difficult to appraise by the absence of comprehensive data. The annual financial statements, although lacking standardised definitions for any category of assets and failing to coincide in the methodology of accounts and accounting periods, therefore, inevitably constitute the main source of information. The application, and that too not always consistently, of static, essentially empirical rules of book-keeping to financial facts must obviously result in not a few errors of presentation, and to some extent, also of facts. Precision and a high degree of fineness in conclusions are, therefore, largely unattainable. The use of such data must be cautious and ought to fully recognise the results of the analysis only as equivalent to a broadly faithful picture of facts and trends, rather than as the crystallisation of accurate, econometric magnitudes.

We are primarily concerned in this chapter with the developments in the last fifteen years, and the treatment consequently is mainly non-historical. The objective aimed at is an aggregative, representative and cross-sectional view of the industry, although it is realised that the intra-industrial variations are drastic and of significance.

A. SOURCES AND QUANTUM OF FINANCIAL REQUIREMENTS

The broad aspects of industrial finance—the agencies that provide, fail to provide, or ought to provide finance to industry ; the proportion of various constituents of ' capital ' ; and the terms and conditions upon which financial assistance was rendered—have been dealt with at length and ably by several Indian writers,¹ and the various Banking Inquiry

1. See, among others, Lokanathan P. S., *Industrial Organisation in India*, p. 202 *et seq.*; Samant D. R., & Mulky M. A., *Organisation and Finance of Industries in India*, p. 121 *et seq.*; Basu S. K., *Industrial Finance in India*, p. 111 *et seq.*; and Cooper R. C., *Corporation Finance and Management in India*, unpublished Ph.D. Thesis, 1949.

Committees. These studies had fairly concluded that there was a paucity of the financial facilities available to industry, and furthermore, that the price payable for these was unduly high.

In vital respects, as will be shown in subsequent pages, these conclusions stand substantially modified in the context of recent developments. Furthermore, we propose to make good the major lacunae in the list of agencies making finance, in one form or the other, available to the industry, ploughed back profits and trade creditors being the most important of such sources of finance. The argument falls into two parts : (a) the determination of the relationship between owned resources, i.e. capital plus free reserves, and outside finance ; and (b) the nature and types of facilities made available by other agencies.

(a) **The Relationship between Owned and Other Resources.**—The most direct approach to an overall picture of the quantum and sources of capital involves an analysis of the liabilities side of the balance sheets. Below such a presentation is made of the financial statements of 50 companies which were common to each of the three dates, 1937, 1946 and 1950-51, selected by us as significant :—

TABLE No. 1
Sources of Mill Finance—50 Common Companies

(in lakh Rupees)

				1937	1946	1950-51
Total Assets				3,530 (100)	7,773 (220)	9,623 (275)
Sources of Assets :						
Capital (including Debentures) ...				1,501 (100)	1,256 (83)	2,894 (192)
Free Reserves				1,087 (100)	4,021 (370)	2,822 (260)
Outside Finance				942 (100)	2,494 (264)	4,007 (425)

Four significant propositions emerge from Table 1.

Firstly, the financial implications of mill operation have been growing in dimension, the assets of the 50 companies recording an advance of the order of 175%.

Secondly, of the addition of Rs. 61 crores to assets, owned resources (capital plus reserves) accounted for Rs. 31 crores, or 50% ; and outside finance supplied Rs. 30 crores, or the remaining 50%.

Thirdly, the rate of growth of owned resources has lagged behind the rate of increase in total assets :—

			1937	1946	1950-51
Total Assets	...	...	100	220	275
Owned Resources	...	...	100	204	221

It may be noted that a major portion of the lag has occurred between the years 1946 and 1950-51.

Finally, the proportion of outside finance to assets has risen from 24 per cent in 1937 to 31 per cent in 1946, and to 41 per cent in 1950-51. This tendency operating simultaneously with a considerable rise in the shareholders' equity constitutes a development of major import.

The propositions submitted above are subjected below to the check of a bigger and territorially more representative group of companies, comprising a little less than one-half of the spindleage installed in the country. The details relate to 1950-51.

(in lakh Rupees)

Region	No. of Companies	Capital	Free Reserves	Owned Resources	Outside Finance	Owned Resources as Percentage of Total Assets
Bombay City	34	1,903	2,207	4,110	2,340	65%
Ahmedabad	11	425	477	902	767	57%
South India	20	831	797	1,638	1,403	55%
Rest of India	19	1,383	906	2,289	1,781	54%
	84	4,542	4,387	8,939	6,291	59%

Out of total assets exceeding Rs. 152 crores, therefore, 41% represents outside finance. The accidental coincidence of the precise figure apart, this generally affirms the results obtained for a smaller group of companies.

The territorial propositions submitted above are suggestive, though only tentative. One remarkable feature, however, in the territorial patterns of finance, is the greater importance of reserves in Bombay and Ahmedabad, as compared to other centres, brought out below :—

	Reserves as percentage of capital
Bombay and Ahmedabad	115%
Other Areas	76%

In view of the fact that a sizeable proportion of the present capital is the capitalisation of accumulated earnings, the difference in favour of the (generally) older mills of Bombay and Ahmedabad is probably greater.

In fine, the recent developments in the field of mill finance are not unmixed additions to financial strength, as is often asserted.²

The broad patterns arising out of an aggregative view of the situation are naturally not exhaustive of the possible positions of individual companies. The intra-industrial relationships are both more complex, and more variegated. In Table 2, 57 companies are classified according to the quantum of owned resources, and the relation of their total assets to the former for the years 1937 and 1946. In Table 3, a more direct view of the position is obtained for a more representative larger number of companies for the year 1950-51, and correlation is sought between the extent of reliance on outside finance and the volume of owned resources for companies in each range of owned resources.

Table 2 may be regarded as the partial quantification of the propositions arising from Table 1, for it enables the position in 1946, when the gap between the rate of increase in owned resources and total assets was small, to be compared with the position in 1937, a pre-war year that yielded anything approaching a reasonable rate of profits. As against 36 companies with owned resources under Rs. 50 lakhs in 1937, there were only 16 companies in 1946. Conversely, the group of companies with owned assets exceeding that level expanded from 21 to 41. Corresponding with our observation of the general increase in the use of outside finance is the fact that in 1946 there were only 11 companies the assets of which exceed their owned resources by more than 125%, whereas in 1937, 25 companies shared this more modest financial policy. Each higher range (assets being in excess of owned resources by more than 125%) has expanded, raising the modal range to 151 to 200%, from 101 to 150%.

The significance of the general trend of increasing reliance on outside finance is, naturally enough, dissimilar for different units, since the expansion in assets achieved on the basis of owned resources varies from 1 : 1 to 1 : 5.

Table 3 deserves more careful consideration, being both more representative in territorial coverage (especially in so far as Ahmedabad mills are concerned, of which twelve are included in this group, as against only one in Table 2), and also because it is the most recent approximation of the financial position that is possible. It is also not without

2. See P. A. Sheshan's article in the *Centenary Volume of the Cotton Textile Industry* issued by Prof. M. P. Gandhi, pp. 41-3; also N. H. Thakkar, *Indian Cotton Textile Industry during Two World Wars*, p. 117 et seq.

TABLE No. 2
Assets of 57 Cotton Mill Companies, as Percentage of Owned Resources
(1937 and 1946)

Capital and Reserves (Lakh Rs.)	100%		101 to 125%		126 to 150%		151 to 200%		201 to 250%		251 to 300%		301% & over		Number of Companies 1937 1946
	1937	1946	1937	1946	1937	1946	1937	1946	1937	1946	1937	1946	1937	1946	
1. Upto 10 lakh Rs.	...	1					1				1	1	1		3 2
2. 10—20	...	1	2	1	2				2				2		7 3
3. 20—30	...		1		2		1	1	1		1				9 1
4. 30—40	...		5	1	3		2	1	2						9 5
5. 40—50	...		3	2			4	1	1	2					8 5
6. 50—70	...		4	1	1	3	2	4		1			2		7 11
7. 70—100	...		3	2	3	6	1	3		3					7 14
8. 100—150	...		2	1		4		4							2 9
9. 150—200	...		3		1			3							4 3
10. 200—300	...			1											1 1
11. 300—400	...			1			1	1							2
12. 400—500	...														
13. Rs. 500 lakhs and more	...			1											1
No. of Companies : 1937	...	2	23		12	10			5		2		3		57
do. : 1946	...		11		13	20			8		1		4		57

TABLE No. 3
(82 Companies—1950-51)

Owned Resources	Liabilities as Percentage of Owned Resources									Total
	% 0-25	% 26-50	% 51-75	% 76-100	% 101-150	% 151-200	% 201-250	% 251-300	% 301 and over	
1. Upto 10 lakh Rs. ...									1	1
2. 11 to 20 ...	1		1		2	1				5
3. 21 to 30 ...			1	1			1		1	4
4. 31 to 40 ...		2	1		2	2				7
5. 41 to 50 ...		2	2	4			1			9
6. 51 to 75 ...	2	2	8	3	4	1				20
7. 76 to 100 ...		3	7	2	1	1				14
8. 101 to 150 ...	1	1	2	2	1	1				8
9. 151 to 200 ...		1		1						2
10. 201 to 300 ...		2	1	1	1					5
11. 301 to 400 ...	1	1		1	1					4
12. 401 to 500 ...	1			1						2
13. 501 and over ...				1						1
	6	14	23	17	12	6	2		2	82

significance that these 82 companies comprise over 45% of the spindle-age installed in the country.

First of all, the range between the biggest and the smallest companies appears to be now definitely greater than was the case in 1937. Even between 1946 and now, there seems to have been a similar, milder tendency at work. This elongation of the range is also obviously not inconsistent with a decline in the proportionate importance of the lower categories of owned assets, and a compensating increase in the share of the upper categories.

Volume of Owned Resources	Proportion of Companies	
	1937	1950-51
Upto 50 lakh Rupees	64%	32%
51 to 100 lakhs	24%	42%
101 to 300 lakhs	12%	18%
301 lakhs and above	Nil	8%

The ratios of outside finance to owned resources vary for companies within each category of owned assets, but it appears permissible to generalise that smaller companies are more likely to have (but do not necessarily have) a higher proportion of liabilities than is probably true of the largest companies. Thus, out of 22 companies with owned assets exceeding Rs. 100 lakhs, 18 relied on outside finance to a lesser extent than the quantum of their own resources, the liabilities of 3 companies

were in the next group (101-150%) and only one company was in any subsequent group. To put matters differently, of the 10 companies having liabilities exceeding 150% of their own resources, 9 owned resources of less than Rs. 100 lakhs each. The largest companies, although the generalisation has a very limited value, appear to be more conservative, judged by this criterion.

Speaking generally, however, companies in any given class of owned resources are in a position to obtain and do obtain very different ratios of liabilities to the ownership interest. In other words, the net worth of a company is a very poor index of the scale of its operations, if the scale be defined in financial terms. It also means that any given change in the general economic climate may have different reactions upon and from the different units comprising the industry.

A rather bold attempt at a descriptive generalisation of mill companies according to the nature of their financial policy is made below :—

Nature of Financial Policy	Criterion (Table 3)	Number of Companies	Proportion of Companies
Conservative	Upto 50%	20	24%
Moderate	51— 75%	23	28%
Liberal	76—100%	17	22%
Bold	101—150%	12	14%
Rash	151—200%	6	7%
Reckless	Over 200%	4	5%

It follows from the preceding classification that approximately a quarter of the companies in the industry are characterised by financial policies that may prove a source of danger to the stability of the industry as a whole, and to the solvency of the affected companies in particular, in a more unfavourable economic climate than the seller's market of recent years.

A remarkable pattern of dispersion in the volume of owned assets (and obviously in terms of other definitions also) is characteristic of mill companies :—

Owned Resources (in lakh Rupees)	No. of Mills	Cumulative Total	Proportion of Total (%)	Cumulative Total (%)
Upto 20	6		7	
21— 50	20	26	25	32
51— 75	20	46	25	57
76—100	14	60	17	74
101—200	10	70	12	86
201—400	9	79	11	97
401—500	2	81	2	99
501 & Over	1	82	1	100

In terms of assets, however, the larger companies have many times the importance suggested by their small numbers. Moreover, as is crystallised below, the biggest half a dozen companies show even greater concentration of resources, owned as well as total.

(in lakh Rupees)

	14 Big Companies (Total Assets of each exceeding Rs. 300 lakhs)	Percentage	6 Biggest Companies (Total Assets of each exceeding Rs. 500 lakhs)	Percentage
Capital	2,131	47	1,413	31
Reserves	1,955	44	1,047	24
Outside Finance	2,982	47	1,823	27
Total Assets	7,069	44	4,283	38

Roughly correlating the 82 companies to the entire industry, on the basis of their possessing 45% of the spindleage, the 14 big companies together comprise nearly a fifth of the total assets employed in the mill industry; on the same basis, the 6 biggest companies control about one-sixth of the assets employed in the industry.

The main propositions emerging from our study are summarised below :—

- (i) Ploughed back profits are a major source of new capital ;³
- (ii) As a source of finance, outside agencies have great and increasing significance over the last decade and a half ;
- (iii) Wide dispersion patterns of companies, judged by any financial criterion, are characteristic of the industry ; and
- (iv) The financial policies of a significant sector of the mill industry appear to be highly vulnerable.

(b) **Outside Finance—Agencies and Quantum.**—The outside agencies which make finance, or its equivalent, available to the cotton mills are : managing agents, public deposits, trade and other ‘ expense ’ creditors, and commercial banks.

It was observed in the preceding section that outside finance was occupying a greater niche, both relatively and in terms of absolute amount, in mill finance. Concomitant with this tendency towards increasing reliance on outside sources as a whole, has come about a

3. A substantial proportion of present capital is nothing else but accumulated earnings, and in view of this policy being widely adopted by the most prosperous companies, the importance of reserves as a source of capital is constantly underestimated. It was not possible to collate the results of a sufficient number of capital histories to arrive at a fair estimate for the industry as a whole, but it appears, on the basis of the experience of a few companies, that well over 50% of the present share capital is capitalised reserves.

drastic change in the proportional importance of the various agencies, so that most of the pre-war generalisations about these have ceased to have relevance to facts. A tremendous increase in the volume of bank advances, and a decline, probably absolute as well as relative, in the finance supplied by managing agents and through public deposits are the main trends crystallising over the last fifteen years. These are considered, in brief, in the succeeding paragraphs.

The decline of the managing agency houses, and of public deposits as sources of finance is likely to be universally accepted, and is a matter of common observation in mill circles. Partly, the advantages of retiring deposits taken in the pre-cheap money period (i.e. prior to 1935) at high rates of interest and replacing these by loans at cheaper rates from the commercial banks, and partly the growth of assets in general, these appear to be the two main factors at work. The closer integration now obtaining between those who manage financial institutions and those who run Indian industry¹ has probably accelerated the process of re-shuffling.

The position is difficult to quantify, except for a statement of the trends at work before the War.²

(in Lakh Rupees)

			Bombay		Ahmedabad	
			1930	1937	1930	1937
Deposits	covered	...	64	56	64	73
	Managing Agents	...	532	750	264	330
		...	273	130	426	530

The tendency of public deposits to decline and the forced substitution thereof by finance from managing agents was not confined to Bombay mills. Data from another source³ clearly brings out the fact that the very same tendencies were at work in Ahmedabad as well, though they did not equally affect the aggregate of deposits. The figures given below relate to deposits with 67 common companies on two dates, 1935 and 1939, divided according to the source :—

4. The industry in Ahmedabad obviously did not like to use banks as financing agencies before the War. In the place of the general distrust of banks then expressed, we now find mill agents on almost every local advisory board of banks having branches in Ahmedabad, and furthermore, mills in Ahmedabad now extensively resort to bank finance.
5. The figures for 1930 are from the Central Banking Inquiry Committee Report, p. 273; the data for 1937 was obtained from the Interim Report of the Textile Labour Inquiry Committee.
6. Basic data from M. J. Desai, *The Financing of the Cotton Textile Industry in the Bombay Presidency*, p. 191, unpublished M.Com. Thesis, 1943.

(in lakh Rupees)

			Public's Share	Managing Agents' Share	Total
1935	...	...	784 (76%)	170 (24%)	954 (100%)
1939	...	...	503 (58%)	383 (42%)	886 (100%)

In other words, a substantial decline in the volume of public deposits was an established fact in the pre-war period, with a concomitant inevitable increase in the reliance on the managing agency houses.

These tendencies gathered strength during the years following the declaration of World War II, with this difference that very soon alternative agencies were supplying the finance, enabling the managing agents to redeem, more or less completely, their own commitments, and to reduce the volume of deposits. At any rate, it is certain that the volume of deposit finance has not expanded beyond the pre-war levels.

Indirectly confirming the proposition put forth above is the rate of expansion, and the present volume of bank finance available to cotton mills. The remarkable, rapid rise in this category is summarised in the figures given below :—

(in lakh Rupees)

	1930	1937	1948	1951
Bank Advances to Mills	425-500	400-425	3,000	5,026

7. The estimates are based on the following data:—

1930: The Central Banking Inquiry Committee (p. 273) gave the figures of loans by banks for 64 mills in Bombay, and 64 mills in Ahmedabad, as Rs. 226 lakhs, and Rs. 42 lakhs respectively, making a total of Rs. 268 lakhs. Ahmedabad was probably the most conservative in this matter, and Bombay the most liberal, so that on an approximation based on spindleage, we place the range for the entire industry at Rs. 425-500 lakhs.

1937: Basis similar to that adopted earlier, but relying on the Textile Labour Inquiry Committee's figures for a larger number of centres.

1948: In 1948 (*The Reserve Bank of India Bulletin*, April 1949), 39 major scheduled banks were known to have made loans to mills amounting to Rs. 24 crores. In view of the concentration of loans to cotton industry with a few banks, dealt with subsequently in the body of the chapter, this figure required an approximate increase of one-fourths to bring it to a more or less correct idea of the total loans given by the entire banking system.

1951: This figure refers to the position at the end of 1951, and is taken from the Survey of Bank Advances made in the April 1952 issue of the *Reserve Bank of India Bulletin*.

The ten to twelve-fold rise in the utilisation of banking facilities is matched below with the working capital index of 50 common companies, although it does not coincide perfectly in time with the former set of figures :—

	1937	1946	1950-51
Working Capital Index	100	399	487
Bank Advances Index	100	720 (1948)	1,200 (1951)

The gap between the rates of progress of the two indices confirms the inference as to the displacement of other agencies of finance. It is reasonable to conclude that not only has the stake of banks in the mill industry risen in terms of volume, but also in terms of its proportional significance.

The terms on which loans are taken obviously vary from company to company, but a general impression arises to the effect that a small advantage in the matter of interest payable is available to cotton mills.⁸ This is probably confirmed by the fact that the proportion of clean to secured advances is about 17% for cotton mills, as against only 8.4% in the case of other industries.⁹

Finally, a small number of banks supply the greater portion of these advances, 11 major Indian banks supplying about 70% of the amount ; exchange banks, 14% ; other scheduled banks, 8% ; and non-scheduled banks, the remaining 8%.¹⁰

The importance of creditors or accounts payable varies widely from one company to another, and has probably declined in its proportional strength during recent years, partly because of the greater prosperity of the industry, and partly as a consequence of the growth of bank finance. It appears from balance sheets, that for the industry as a whole, about 25% of the outside finance is drawn from these sources.¹¹

Two additional sources of assets, if not finance, may be mentioned—the unpaid wage bills, and sources such as provident fund contributions from employee remuneration.

The first is of greater financial importance at the moment, and in accordance with the rules contained in the Payment of Wages Act, varies

8. See *Reserve Bank of India Bulletin*, April 1949, p. 209.

9. *Ibid.* Calculated on the basis of the information supplied.

10. *Ibid.*, April 1952.

11. An extreme case of the pre-war period was pointed out to the writer by Sankalchand G. Shah, the prominent yarn merchant. The mill in question was advanced money to buy raw cotton and to pay other costs, and was bound by contract, to sell the yarn exclusively to the yarn dealer who had advanced the money.

from 40 days' remuneration on pay day to 10 days' wages on the payment of monthly dues. The actual money values may be estimated for the entire industry at Rs. 13 to 14 crores at the maximum and about Rs. 3 to 4 crores at the minimum.

The second source, now mainly confined to salaried employees rather than wage earners, will certainly become of greater importance with the introduction of the compulsory provident fund schemes, especially during the first few years when payments over would be very small.

To sum up, sources other than owned resources which make finance or its equivalent available to cotton mills are numerous and have undergone major changes in relative position in the last few years. The utilisation of banking facilities is of major consequence, and negatives the utility of many previous generalisations in the field of industrial finance.

B. SIZE AND PROFITABILITY

A subject of abiding interest, the attempt at discovering the correlation between the size of a firm and its capacity to earn profits is understandably difficult, both in methodology and in the interpretation of the data. The problems faced in any such investigation resolve into (i) the determination of suitable and alternative measures of size ; (ii) the determination of the appropriate criteria of profit ; and (iii) the most difficult of all, the isolation of the effects of the scale of operation on the volume of profits, as defined.

The fixation of suitable measures of size is not simple, and it is particularly difficult to obtain a desirable level of precision. The difficulty is more pertinent in the case of multi-product, non-homogeneous industries like cotton textiles. The complexities of the situation were crystallised fully in the chapter dealing with the equipment patterns, and it was pointed out that it is almost impossible to evolve a comprehensive physical measure of size. The inadvisability of regarding all spindles, whether coarse, medium or fine, as identical, or of treating looms in this aggregative manner irrespective of width or type, or the failure to take into account other types of processing equipment is further complicated by the performance of various services on a commission basis by some mills,¹² and the use of fixed assets secured on hire.¹³ The considerations pointed out in an earlier chapter about the extent of shift-utilisation and the variation therein from month to month also may not be lightly brushed aside.

12. According to the Census of Manufactures, 1948, the value of services of this type exceeded Rs. 70 lakhs.

13. According to the same source, the rent annually paid for fixed assets exceeds Rs. 19 lakhs.

It may be doubted whether the number of workers employed does not afford a reliable physical basis that can be uniformly applied to all cotton mills.

The answer must be in the negative on two grounds. Firstly, it must be recalled that levels of labour deployment are significantly different, from centre to centre, and to a lesser extent from mill to mill. Obviously, it would be ridiculous to assert that a shed of 100 looms operating on the basis of two looms per weaver (i.e. with 50 weavers) is bigger than another shed of 100 looms working on the four-loom system (i.e. employing only 25 weavers).

These are hard, almost intractable problems to solve. The absence of an easy solution to them, or failure to appreciate them, can only lead to the adoption of a physical norm of size that is inadequate and which measures the performance of each company by a yard-stick that has sometimes forty inches, at other times thirty, but almost never thirty-six.

The question may then arise—why not adopt a financial measure of size? Paid-up capital, gross assets, net assets, block expenditure, sales—do not these offer a reliable index of the dimensions involved? Paid-up capital is for obvious reasons, no criterion at all; and in view of the vastly different volumes of gross assets that may be attained at any particular level of owned resources, as was indicated in the earlier part of this chapter, it is a matter of speculation how far two equal volumes of gross assets may be regarded as identical. The contrary case of net assets or owned resources likewise raises the crucial question whether the similarity of volumes of net assets is the valid ground for ignoring the total or gross assets employed. Block expenditure likewise suffers from being materially influenced by accounting valuation procedures, the price level at which the greater portion of the block was acquired, and moreover, it forms only a fourth of the assets of mill companies, as we shall see later. Sales, even apart from the question of stocks, are hardly a suitable measure, unless the production assortments sold by two companies are substantially identical, a condition almost impossible to achieve under Indian conditions.

In fine, no single measure of size—whether physical or financial—may be regarded adequate without additional proof being adduced in support of the conclusions arrived at on the basis of such a criterion.

The second problem is, theoretically at any rate, more easy of solution, for it may not be impossible to prescribe a reasonably satisfactory definition of profit, and to reduce all the financial statements to uniformity of conception. But this is just not possible with the Indian financial data.

The most complex problems arise when the effects of scale have to be separated from the very large number of factors that go to make

and vary the level of earnings of a company. Apart from the influence of price-trends or market conditions, none of which may be identical in relation to the different sectors of the industry, there are the intangible but nonetheless substantial differences to profit levels caused by the qualitative differences in management. How are these, and these are only illustrative of the types of considerations that do arise and are of significance, to be integrated into a norm of size? In the absence of such an integration, the mere co-variance of profit with a given change in size is not conclusive proof, and may be purely accidental. Thus, it is certain that some of the larger companies display a higher rate of profit because of unquestionably superior management, a fact which has enabled them to grow from smaller dimensions to their present size. Is the rate of profit earned by such a company to be attributed to the later acquisition of size rather than to its prior possession of a level of managerial efficiency above the ordinary? In the light of the faster rates of growth of some of our companies, this is no theoretical juggling with purely academic possibilities, but a problem that must be faced.

Two major studies have sought to establish correlation between the size of cotton mills and their profitability—Dr. Lokanathan in “Industrial Organisation in India”, and more recently, a bigger effort by Dr. M. M. Mehta in the “Structure of the Cotton Mill Industry in India”. The methodology of neither study is satisfactory in relation to the points submitted above, and indeed, in the main, the issues are not raised at all. The data of the latter study suffer from several other defects, factual as well as conceptual, and taken together with the methodological lacunae fail to establish the main hypothesis. In two separate sections each of these analyses is examined in the pages to follow.

I. **Dr. P. S. Lokanathan's Analysis**¹⁴.—Dr. Lokanathan measures the average profit performance of 53 companies over the period 1916-30, and classifies the companies in a number of spindle ranges. In each range he gives the profit rate data for individual companies and works out the average rate of profit on two bases: (i) an average rate of profits inclusive of companies that failed and (ii) an average rate exclusive of such companies. The results are summarised in the Table on the next page.

On the basis of these figures, although not altogether unmindful of the intra-range dispersion, Dr. Lokanathan arrives at the conclusion that mills having less than 30,000 spindles and mills having more than 75,000 spindles do not do as well as those within these limits. It is also contended that the failure data points to the same conclusion, as does the record of dividend declarations.

14. *Industrial Organisation in India*, p. 98 et seq.

Spindle Range	No. of Companies	No. of Companies failing	Average Rate of Profits 1916 30	
			All Companies	Companies that did not fail
Upto 30,000	8	4	9.8	19.25
30,000—45,000	25	7	16.3	22.60
45,000—60,000	9	...	30.5	30.50
60,000—75,000	2	...	65.0	65.00
75,000—100,000	3	...	16.0	16.00
100,000 and over	6	1	26.0	31.00

This statement of the position is entirely unacceptable, apart from its failure to tackle the fundamental methodological problems previously discussed, on the following grounds.

(i) The variations in loom : spindle ratio, and the disparity in the extent of machine utilisation from mill to mill are altogether ignored in the present approach, which also fails to recognise that the number of spindles alone is a very poor index of the magnitude and diversity of textile equipment.

Incidentally, it is incorrect to assume that a particular company remained in the same spindle range, or at the same figure of spindleage during the entire period of Dr. Lokanathan's study. The following figures of the size-dispersion of Indian mills in terms of spindles, worked out by Dr. N. S. R. Sastry,¹⁵ are indicative of the instability of the size-distribution figures during the period¹⁶ :—

Spindle Range	No. of Mills		Difference	Proportion	
	1925	1937		1925	1937
Upto 15,000	42	68	26	17	21.0
15,000—30,000	100	140	40	39	43.0
30,000—45,000	57	59	2	22	18.0
45,000—60,000	27	34	7	11	10.0
60,000—80,000	14	8	—6	6	2.5
80,000—100,000	5	9	4	2	3.5
Above 100,000	7	6	—1	3	2.0

(ii) The method of delineating the results in terms of minimum and maximum scales of operation beyond which profitability is impaired,

15. *A Statistical Study of India's Industrial Development*, p. 52.

16. This problem is also discussed in the next section dealing with Dr. M. M. Mehta's analysis.

adopted by Dr. Lokanathan is, obviously, not directly relevant to the problem of ascertaining the co-variance between size and profitability.

It is also not understandable how 75,000 spindles can be regarded as the upper limit, when from his own data, companies with 100,000 spindles and over earn profits at the rate of 31%, which is higher than the rate of earnings obtained by 34 out of the 36 companies comprised in the ranges delimited by him as the outer boundaries of profitability.

Furthermore, does not the assertion that a company at the upper level (which is two and a half times as big as the company at the lower level) can be as profitable as a company at the lower level, beg the question?

(iii) It is also difficult to reconcile the arithmetic average for various companies, which is how Dr. Lokanathan calculates the profit rate for companies in each range of spindles, with the original data. This may be judged from the dispersion of the same companies according to profit rates shown in the Table below :

Average Annual Rate of Profit (1916-1930)

Spindle Range	Upto 5%	5-10%	10-15%	15-20%	20-30%	30-40%	40-50%	50-75%	Above 75%	No. of Companies	Dr. Lokanathan's Average
Upto 30,000	...		1	1	2					4	19.25%
30-45,000	...	1	2	4	6	5				18	22.16%
45-60,000	...	1	1	2	1		2	2		9	30.05%
60-75,000	...				1				1	2	65.00%
75-100,000	...		2		1					3	16.00%
100,000 and over	...	1			1		1	2		5	31.00%
	1	2	6	7	12	5	3	4	1	41	

It is clear from the above that at any level of spindleage a number of different profit rates are obtained, the highest rates being confined to a very few companies, with no particular cluster in any category of spindleage. Likewise, the lowest rates of profit are obtained by very few companies distributed over a number of different spindle ranges.

(iv) In the light of the preceding propositions, dividend performance, which can at best only vaguely reflect the capacity to earn profits, need not be investigated any further. But on careful reading one fails to see how these figures can support Dr. Lokanathan. By his own analysis, 31 out of 53 companies did not declare a dividend in one or more years. Only three out of these thirty-one companies have less than 30,000 spindles and the passing over of dividend has taken place in their case for one or two years only, as against at least seven companies

with spindleage in excess of 60,000 failing to declare a dividend for five years or more. How these facts can be regarded as particularly unfavourable to the smallest mills is not appreciated.

(v) Dr. Lokanathan adduces with approval the fact that out of 12 companies which failed or had to be reconstructed, 4 were in the class of mills having less than 30,000 spindles. Granting that this rate is high, how is the high incidence of failures in the 30,000-45,000 spindles group (7 mills) to be explained? Is it fair to make a generalisation of the proneness to fail on the basis of just 12 failures? Also could it be that nearly 22% of the mills in this country failed, as Dr. Lokanathan's proportion of failures to the group of 53 mills would have us believe? Is it not likely that the group of 53 mills is largely comprised of Bombay mills, in a rather abnormal period of their existence?

It may be interesting to speculate whether the failure of a lakh spindles and more at the highest level and over 260,000 spindles worked in larger units is of lesser significance than the failure of 60,000 to 80,000 spindles in the group of smallest companies.

It follows from the considerations submitted above, and is reinforced by some of the facts brought out when dealing with Dr. M. M. Mehta's study in the next section (because of their more direct relevance to his work), that Dr. Lokanathan fails to establish any co-variance between size and profitability. The qualifications and restraint in his study are noteworthy, but do not make the generalisations any more acceptable.

II. Dr. M. M. Mehta's Analysis.—Dr. M. M. Mehta in his recent work on the Structure of the Cotton Mill Industry in India¹⁷ has devoted considerable space and effort to the establishment of a definite correlation between the scale of operation and profitability.

Dr. Mehta maintains that the following propositions are well established as a result of the studies made by Crum, Blair, and Anthony :¹⁸

- (i) Smaller units are technically inefficient ;
- (ii) their unit costs are higher as compared to larger units ; and
- (iii) that the mortality rate is higher for these units.

Smaller units in the cotton mill industry then do not have any future, according to Dr. Mehta, and he further argues that such a tendency has been historically in operation.¹⁹

On the side of the methodological approach it is suggested that market domination has little significance in the cotton mill industry,

17. The study was published in 1950.

18. *Ibid.*, p. 3.

19. *Ibid.*, p. 4.

and the working of shifts or differences in hours of work do not materially affect productive capacity.²⁰ Various criteria of measurement—workers employed, cotton consumed, spindleage, etc.,—are indicated, and the paucity of data on some aspects is recognised but is dismissed as being of no consequence.²¹

For a detailed application of his techniques Dr. Mehta selects mills in one centre—Ahmedabad, for the period 1929 to 1942. Among factors that appear to have weighed with Dr. Mehta in his selection of Ahmedabad mills for study are greater homogeneity of conditions of management between mills and the belief that the levels of labour efficiency and the degree of mechanisation do not significantly vary from one company to another within a centre.²²

To the mills of Ahmedabad, or to smaller groups of them, three different yardsticks for measuring the quality of performance in relation to size are applied : (i) earning capacity ; (ii) spindle, loom and labour productivity ; and (iii) the average cost of production.²³

The first method is sought to be judged *vis-a-vis* a number of different bases,²⁴ capital and funds, effective capital, gross block, net block, paid-up capital, etc., over the period 1929-42. The results submitted below are abstracted from Dr. Mehta's study :—

Rates of Profit on Different Bases (%)

Mills with Spindleage	Capital & Funds		Effective Capital		Gross Block		Net Block		Dividend Rate (1929-42)
	1938	1939	1938	1939	1938	1939	1938	1939	
Upto 15,000	0.98	1.30	0.23	0.43	0.35	0.63	0.43	0.81	5.85
15-30,000	4.33	4.30	1.96	2.13	2.98	3.26	4.80	5.27	8.33
30-45,000	5.53	4.65	5.58	4.65	4.67	4.00	10.14	8.41	15.94
45-60,000	13.00	11.42	4.43	7.29	10.92	10.86	10.64	17.95	27.45
Above 60,000	10.88	10.45	8.09	7.60	11.53	11.52	26.26	29.43	24.40

On the basis of the above figures it is concluded that the capacity to earn profits rises with an increase in the size of a unit.²⁵

Dr. Mehta arrives at a financial estimate of output, presumably from the profit and loss account, for the purposes of applying his second criterion. He divides this figure by (i) the number of spindles, (ii) the number of looms, and (iii) the number of workers employed as

20. *Ibid.*, p. 15.

21. *Ibid.*, pp. 21-22.

22. *Ibid.*, p. 154.

23. *Ibid.*, p. 54.

24. *Ibid.*, p. 162 *et seq.*

25. *Ibid.*

given in the Annual Statement of the Millowners' Association, Bombay, and each of the three figures so obtained, after being averaged for the purpose of yielding a group estimate, is considered the productivity of each unit of the three divisors. The figures are submitted below :—

Spindleage		Production per spindle	Production per loom	Production per worker
		Rs.	Rs.	
Upto 15,000	...	39	1,506	1,768
15-30,000	...	46	1,878	2,193
30-45,000	...	48	1,907	2,222
45-60,000	...	53	2,100	2,523
Above 60,000	...	80	3,183	3,190

The upward trend with each higher spindle group is corroborative of the results attained by the first method. The similarity in movement trends of the three series is regarded as additional confirmation of the superiority of large-scale operation.²⁶

Finally, Dr. Mehta is of opinion that the average costs are lower for the bigger companies. For about 40 companies he calculates the proportion of each major item of cost, averages the results according to spindle-groups, and brings out the reduction in the proportion of some costs—for example, raw cotton—with each higher spindle group.

In brief, Dr. Mehta goes further than Dr. Lokanathan and suggests a direct relation between the scale of operations and profitability, productivity per unit of equipment and labour, and costs of production.

In the pages to follow, these hypotheses are examined to bring out their utter fallacy. It should be apparent, however, that some of the comments made in the preceding sections have equal and direct relevance to Dr. Mehta's approach as well, and do not need to be restated. Before discussing the details of Dr. Mehta's copious quantities of data a brief examination is made of his methodology and approach.

The theoretical propositions as stated by Dr. Mehta are definitely not as well established as Dr. Mehta regards them.²⁷ Furthermore, each of the studies (by Crum, Blair and Anthony) adopted a financial measure of scale—total assets or sales, for example, and not a partial, absolutely inadequate physical measure like spindleage, which does not differentiate between mule and ring spindles and which, amazingly enough, also regards doubling spindleage as part of the yarn spinning process.²⁸ And it is obviously more likely that some aspects of the financial structure

26. *Ibid.*, p. 174.

27. See Jewkes John, *Ordeal by Planning*, pp. 38-41.

28. *Op. cit.*, p. 15.

are better correlated to financial results, than a comparatively static, physical index of size.

Moreover, the assertion that market domination has little significance in the mill industry neglects the elements of price-leadership, and the premiums resulting from consumer following (which are pointed out in Part II), which although mainly extraneous factors as regards scale of operation, do materially influence the financial results of the companies concerned.

It is difficult to understand the grounds which enable Dr. Mehta to regard the working of shifts and differences in hours of work as not materially affecting productive capacity. The proposition as advanced is not merely inconsistent with the commonsense view that a mill working two shifts operates on double the volume of production, etc. than the same mill on a single shift, but it is also increasingly disparate with the facts in the Ahmedabad mill industry during the period of Dr. Mehta's study and later. The nature of the error involved in Dr. Mehta's judgment may be gauged from the data submitted below.²⁹

	No. of mills working the night shift	No. of workers employed on the night shift
December 1930	18	6,950
January 1937	19	6,960
March 1939	39	22,700

The substantial difference that night-shift working made to the rate of machine utilisation is reflected in the excess of the rate of cotton consumption of 67 common cotton mill companies above the rate of increase in their physical equipment—spindles and looms. The figures are ³⁰ :—

	1930	1939	Percentage Difference
1. Spindles at work	12,14,000	16,37,000	+ 33%
2. Looms at work	28,000	42,300	+ 50%
3. Cotton consumed (in candies)	1,56,000	2,73,000	+ 75%

Incidentally, the unreliability of Dr. Mehta's only measure of size—spindleage—stands out from the above table which brings out two facts : firstly, that the size-dispersion was not only not static over the entire period, but that there was a considerable difference in the rates

29. See *Textile Labour Inquiry Committee, Report*, Vol. II, pp. 162-3.

30. Basic data from M. J. Desai, *the Financing of the Cotton Textile Industry in the Bombay Presidency*, unpublished M.Com. Thesis, Appendix II, 1943.

of growth of the different types of equipment. The instability, characteristic of the Ahmedabad mill industry, when judged in these terms, is further documented below, with data obtained from Dr. Sastry's study³¹ :—

Ahmedabad Mills: Size Dispersion (1925-37)

Spindleage	No. of Mills		Loomage	No. of Mills	
	1925	1937		1925	1937
Upto 15,000	...	5	Upto 200	1	1
15,000 to 30,000	...	33	201—400	15	9
30,000 to 45,000	401—600	15	32
45,000 to 60,000	...	3	601—800	12	16
60,000 to 80,000	801—1,000	5	11
80,000 to 100,000	1,001—1,200	...	1
Above 100,000	Above 2,000	4	5

Doubt is also cast on the representative character of results obtained from a study of mills in Ahmedabad because out of the 26 mills with more than 60,000 spindles in 1925 not one was located in Ahmedabad, and in 1937, it had only 2 out of 23 such mills, although about a quarter of Indian mills were located therein. It is even more surprising that Dr. Mehta should have decided upon Ahmedabad when he himself provides a catalogue of factors which retard the growth, in terms of size, of Ahmedabad mills.³²

The further assumptions made in Dr. Mehta's study about the absence of significant variations in the level of labour efficiency and mechanisation, rendering mills within a centre more comparable to each other, are at variance with the facts which were discussed in some detail in the chapter dealing with labour deployment problems. By way of an additional affirming illustration, details are given below, for Ahmedabad as well as Bombay mills, about the occupation of sider or piecer, relating to July 1937³³ :—

	Siders Employed		Ring-Frame Shifts		Proportion of Total	
	Bombay	Ahmedabad	Bombay	Ahmedabad	Bombay	Ahmedabad
Single Siders	4,336	4,954	2,168	2,477	31.0%	34%
Double Siders	4,678	2,154	4,676	2,154	68.5%	46%
Treble Siders	28	...	42	...	0.5%	...

31. *Op. cit.*, pp. 54-55.

32. *Op. cit.*, pp. 83-5 and 118.

33. *Ibid.*, p. 23.

The non-comparability of financial results between mill and mill appears even greater when it is recalled that during this period levels of labour deployment were already shifting upwards. Thus, to illustrate with reference to the same occupation, the number of two-siders in Ahmedabad rose from 792 in August 1934, to over 2,000 in March 1939, about five years later.³⁴

A further factor complicating the tasks of comparison is the great intra-centre variation in wage rates for the same type of work prior to the standardisation of wages. Although it would be absurd to attribute higher profits exclusively to lower wages, their significance to some mills is indisputable in the light of the figures submitted below,³⁵ which were utilised in another context earlier :—

Ahmedabad Mills Divided According to Wage Levels

	Average	Lower than Average	Higher than Average	Total
Mills above a stated profit level ...	12	12	20	44
Mills below a stated profit level ...	6	12	2	20
	18	24	22	64

It is clear that the measure of homogeneity in conditions of work and wages, required to enable a definite appraisal of the influence of the scale of operations on the volume and the rate of profits, does not obtain in Ahmedabad prior to the standardisation of wages.

In the light of these considerations, any further examination of Dr. Mehta's hypotheses may be deemed unnecessary but for the distant, almost unrealistic expectation that the scale of operations is sufficiently significant to outweigh all these contrary considerations. The desire not to neglect a possibility of this character constitutes the only ground for an additional examination of Dr. Mehta's yardsticks and the results obtained by their application.

Some aspects of the unreliability of his only measure of size, spindle-age, have been already considered. It only remains to add that the failure to differentiate mills according to the quality and composition of their product-structures, is equivalent to a failure to appreciate the important financial implications arising out of the same.

The broadly similar upward movements of profit rates calculated on a number of bases, all provide only a single type of result arranged according to an unreliable and misleading criterion of size. These do not serve at all as checks on each other, contrary to Dr. Mehta's view

34. *Ibid.*, p. 189.

35. See Chapter II: The Wage Situation.

of them. They would have served as independent checks and alternative results only if each had been made a measure of scale, in turn.

Among other factors vitiating the conclusions of Dr. Mehta are the use of accounting profits unadjusted for depreciation at rates allowed under the income-tax law, and the tremendous intra-range dispersion of profit rates which was also true of Dr. Lokanathan's analysis. The obviously better performance of smaller companies in the matter of dividend payment, than would appear to be justified by Dr. Mehta's results on other bases of profit-rate calculation, is also intriguing.

Dr. Mehta's second criterion—productivity per spindle, loom, or worker,—leads to results of no validity whatever. He appears to have treated financial incomings as equivalent to output, which is obviously absurd. The division of this same figure by each of the three items—spindleage, loomage, and the labour force—is wholly unwarranted for the values of raw materials and store purchases included in the so-called 'output' have nothing to do with the productivity of a spindle, a loom, or a labourer. The share of the finishing processes in this 'output' is also not ascertained, and in the light of our previous conclusions, this represents an error of increasing dimensions with the passage of time. The valuable premiums secured from consumer following by some mills will likewise unfavourably affect the validity of total financial incomings to be equated to 'output'.

In other words, the magnitude to be so divided is the value added by manufacture, which *must*, in addition, be separated into the respective contributions of the various departments, which alone ought to be divided by the volume of equipment to yield the monetary measure of productivity in a given year.

Furthermore, in order to arrive at a comparable measure of spindle or loom productivity, the spindleage and loomage should be reduced to spindle or loom shifts of a given number of hours, or into spindle and loom activity for any other defined period of time (say, an hour).

Dr. Mehta's estimates of labour productivity are equally unacceptable, being based on the number of workers employed per mill, as given in the Annual Statement of the Millowners' Association, Bombay. As a footnote to the Statement annually repeats, these represent only employment on the first or day shift. And, since not every mill was working a second shift, or working it with a labour complement that was only a defined proportion of its labour force on the first shift, the calculations of Dr. Mehta do not afford any index of productivity.

Dr. Mehta's own data³⁶ negatives the truth of his third criterion, from which it is obvious that at least ten other companies, distributed

over a number of different spindle ranges, have a lower proportion of cotton costs than the group of largest companies for which these work out to 40.20%.

Spindle Range	No. of Mills having Lower Proportion of Cotton Costs as Compared to the Largest Companies
15,000 to 30,000	6
30,000 to 45,000	3
45,000 to 60,000	1

This method of looking at costs is erroneous in principle. If all costs are equated to 100, the fact that one item works out at a higher ratio, only means that some other costs are lower in proportion. And since total costs are necessarily 100 for each company and category, this would lead to the absurd conclusion that costs are identical for each company or category of companies.

To sum up, Dr. Mehta has singularly failed to substantiate his theoretical standpoint from the results of his inductive approach. There is no reasonable basis for presuming that the capacity to earn profits in the cotton textile industry has hitherto been related in any definite, necessary manner with the size of a unit. The various factors at work have been numerous, complex and lacking in the attribute of uniformity in their relation to individual units. No study of size and profitability can ignore these, and still be considered as realistic.

The propositions emerging from the Western studies of the problem, however well-established, (and, this is not altogether free from doubt) in their particular locational context, may not fairly be extended by analogy to represent conditions in the cotton mill industry in India.

The qualifications which necessarily modify and circumscribe almost every single proposition crystallising throughout the present study, are against discovering any statistically significant correlation between the physical scale of operations and earnings.

C. A REVIEW OF THE PROBLEMS OF FINANCIAL MANAGEMENT

The various trends operating in the physical and the market structures of the cotton textile industry have had their respective implications in the financial structure of the industry. These implications have been felt in a number of different directions : firstly, there are the problems connected with what is conveniently called industrial maturity ; secondly the growing importance of fixed and overhead costs ;

and, finally, the various developments in the assets structure. Each of these are examined, in that order, in the following pages.

The Implications of Industrial Maturity.—Industrial maturity, in the context of Indian cotton mills, implies the adequacy of indigenous production for the needs of the national market, increasing internal competition in a normal market, although avoiding the risks associated with early enterprise in the mill industry. The effects of industrial maturity are perceived in the recent patterns and rate of growth, the altered relationship between wages and profits, and the investor's evaluation of the prospects of the industry, as reflected in share prices and the difference between the intrinsic and the market values of shares.

(a) **Growth Patterns.**—Historically speaking, the cotton mill industry grew in the early stages largely (though never exclusively) as a spinning industry. The development of weaving was later and more rapid. But these broad tendencies apart, there is a distinct slowing down, in the last fifty years or so, in the rate at which new equipment is being added.

Average Annual Rate of Increase

Period	Bombay City		Rest of India		All-India	
	Spindles	Looms	Spindles	Looms	Spindles	Looms
1908 to 1914	... 45,700	2,030	1,24,300	4,020	1,70,000	6,050
1936 to 1939	... — 44,600	—317	1,33,600	1,970	89,000	1,600
1908 to 1939	... — 3,800	1,160	1,34,200	3,240	1,38,000	4,300
1939 to 1950	... 6,900	—180	80,100	1,880	87,000	1,700

Source: Basic data from the Annual Statement of the Millowners' Association, Bombay.

It is clear from the above table that the rate at which new equipment is added, is distinctly slower in the case of an older centre like Bombay City than is the case with the rest of India. It may also be noted that the rate of new additions in the last decade is barely one-half of the rate at which spindles were being added before the First World War. It is still lower in the case of looms.

Simultaneously with the reduction in the rate of growth of the mill industry there is a shift in the regional location of new mills, which are being constructed, as may be seen below, in areas where the industry is hitherto less developed :—

Mills in the Course of Erection on 31st August 1950

Region			No. of Mills	Spindles	Looms
1.	Bombay State	...	2	29,000	2,300
2.	Madhya Pradesh	...	2	37,000	690
3.	West Bengal	...	10	134,000	6,600
4.	Madras	...	8	80,000	500
5.	Travancore and Cochin	...	2	20,000	200
6.	Mysore	...	1	15,000	300
Total			25	315,000	10,590

Projected equipment of new mills as
percentage of existing equipment

5.5%

Basic data from Millowners' Association, Bombay, Annual Statement, 1950.

It follows from the above considerations that the comparatively slower rate of growth can bring about only a smaller proportional change in the structure of the industry presently, although the implications of this small addition for the stability of the industry may be graver, since the industry has already reached a stage when it constitutes the largest and the most important textile supplier in the Indian market. A slower rate of new additions to equipment also means a higher proportion of replacement and renewal demand in the new investment in 'fixed' capital.

In the context of our analysis of the market situation it is clear that new investment in the cotton mill industry, at the more or less present levels of our standard of living, cannot hope to displace an extra-national supplier of textiles. It must lead to increased competition between the various local producers on the one hand, and among mills in particular. It is also clear that the new additions to equipment could more easily lead to a position wherein exists a chronic state of over-production in relation to extant demand. The fact that these new mills are being more or less wholly set up in low-wage areas threatens to make the position even more complicated.

In brief, the slower rate of growth denotes the structural stability of the industry, although its implications in terms of market stability are more serious and less favourable.

(b) **The Relationship between Wages and Profits.**—Another very significant aspect is the relation between the wage bill and the volume of profits. In the figures given below,³⁷ the data relating to two boom

37. The basic data for the first period was obtained from J. A. Wadia's written statement before the Indian Tariff Board, 1926. (Evidence, Volume IV, p. 71 *et seq.*) The data for the latter period is based on the figures of profits as estimated by the Industrial Court for the purpose of bonus awards; and the

periods is juxtaposed to bring out the nature of the long-term change that has finally emerged :—

(in lakh Rupees)

	1905 and 1906	1948 and 1949
Average annual net profits, before taxation	227	1,050
Annual wage bill	209	2,800

Although it is in no way implied that the change is abrupt in its emergence, it is undeniable that it is of a fundamental character. In other words, in order to earn Rs. 100 in the first decade of this century, the industry had to pay out only Rs. 87 as wages ; in 1948-49, it requires a wage payment of Rs. 267. Equally important is the fact that taxation now takes away about 40% of the net profits as against approximately 10% in the earlier period, with the results submitted below :—

	1905 and 1906	1948 and 1949
Net profits after taxation	100	100
Wage bill	105	467

Under-estimation of the magnitude of the change is involved in the above figures since 1948 and 1949 cannot fairly be regarded as typical of the booms likely to affect the mill industry in the near future. It is also not unlikely that this ratio has undergone a further extension in the years 1950, 1951 and 1952.

In view of the present reduced differentials between wage levels in different areas in the country and the general lower level of labour deployment in most low-wage areas, the older ratio of profits to wage payments is not generally approached even by mills in such areas.

(c) **Investors' Evaluation.**—The significance of the changes noticed above has not escaped the stock market, although the process is likely to have been only unconscious and discontinuous. This may be appreciated from the figures submitted below which compare the highest share prices for a few leading companies during the boom period of 1920-21, and the highest prices attained in the last seven or eight years :—

wage bill was calculated on the basis of figures given in the *Bulletin of the Bureau of Economics and Statistics*, 1951.

Mill Company				Price of Share during Boom Period 1920-21	Highest Price Recently
				Rs.	Rs.
1.	Bombay Dyeing	...	...	4,395	3,290
2.	Century	...	...	1,545	1,300
3.	Colaba Land	...	...	3,800	526
4.	Finlay	...	...	1,845	555
5.	Khatau	...	...	920	555
6.	Kohinoor	...	...	4,800	1,180
7.	New City	...	...	1,040	640
8.	New Great Eastern	...	...	1,375	685
9.	Swan	...	...	1,700	570
10.	Swadeshi	...	...	6,030	1,005
11.	Vishnu Cotton	...	...	2,375	865
Average Value				100	37

Source: Basic data from Annual Market Review, issued by Premchand Roychand & Sons.

The tendencies stated above also find expression in the difference between the proportional intrinsic value of the assets of a company and the price of its shares. In the table given below, with data collated from the same source, the changes in the position are crystallised further :—

				Share Value as Percentage of Intrinsic Value
1928	...	...	...	39
1938	...	...	...	37
1946	...	...	...	114
1950	...	...	...	89

Another indication is to be had from the fact that on April 15, 1952, shares of 15 out of 84 companies listed in the *Indian Finance*, were being quoted below par.

Rising Proportion of Fixed and Overhead Costs.—A strong case exists suggesting that the importance of fixed and overhead to total costs has been rising in the cotton mill industry. The trend can be ascribed to a number of different reasons. The assumption of new and more complex management functions, and the creation of various indirect services within the mills, such as canteens, creches, etc. are one set of such factors. The process of capital intensification and the establishment of superior levels of labour deployment also work towards the same conclusion. Loans from banks now form a much larger proportion of outside finance, a fact which must also raise the proportion of less flexible costs. Likewise, the substantially larger amounts of amortisation quotas in the case of new equipment are important not only for new

mills, but, as will be evident from the next section, are of general importance. The necessity to make interest payments for the portion of capital obtained in the past at high rates also tends to operate in the same direction although a considerable portion of it has been retired in recent years.³⁸

The tendency clearly reflects itself in the ratio of workers engaged to other staff employed. This ratio was 44 per 1,000 of the latter in 1911, and 58 per 1,000 workers in 1948. The details are given below³⁹ :—

		No. of Workers	Other Staff
1911	...	295,000	13,200
1948	...	673,000	39,200

Finally, the introduction of compulsory provident fund and health insurance schemes is also likely to accelerate the operation of these tendencies in the future.

The importance of the generalisation emerging from the above analysis lies in the fact that financial operation presently stands more sharply bifurcated into the current or flexible type of costs on the one hand, and the fixed and overhead costs, on the other. The latter do not change with the former, and are not easily reduced. Conversely, a lower level of gross earnings is bound to impinge more severely upon the residual category of net earnings. It is, therefore, reasonable to expect that fluctuations in the earnings of cotton mills will be more common in the future, than they have been until now. This will call for superior skills in the management of financial operations. The results of the next section, when viewed in conjunction with the above considerations, emphasize the vastly complex pattern of financial management that is replacing the earlier, simpler patterns.

38. The rates of interest guaranteed on preference shares are a good illustration.

Rate of Issue (%)	No. of preference share issues
4½%	1
5	4
5½	1
6	6
6½	2
7	8
7½	1

Basic data from the *Indian Finance*.

39. Sources: (1) Industrial Census, 1911, Statistics of British India, Vol. 1, 1918.
(2) Census of Manufactures, 1948.

D. THE ASSETS STRUCTURE

Data essentially similar to that used in the discussion about the sources and quantum of capital is utilised for the present discussion as well. The major trends in the assets structure are : (1) the increase in the volume of assets ; (2) the fact that a significantly larger proportion of assets now constitutes working capital than was true before the War ; (3) the composition of recent investment in 'fixed' capital ; and (4) probably as a consequence of all the above, the strain on the liquidity of the cotton mill industry.

In the table succeeding are presented the basic factors, firstly, for a group of 50 common companies for the years 1937, 1946 and 1950-51, and secondly, for a larger group of 82 companies comprising nearly one-half of the spindleage in the country in 1950-51.

(in lakh Rupees)

	1937	1946	1950-51	1950-51
	(50 Common Companies)		(82 Companies)	
Gross Block	4,297	4,730	6,003	8,383
Net Block	1,943	1,429	1,982	3,072
Working Capital	1,587	6,344	7,742	11,695
Total Assets	3,530	7,773	9,623	14,767

The data for the 50 companies is arranged below in the form of indices to facilitate the examination of the assets structure :—

	1937	1946	1950-51
Gross Block	100	100	139
Net Block	100	73	102
Working Capital	100	399	487
Total Assets	100	220	275

The main trends noticed from the above tables are summed up below.

(1) The relationship between the volume of fixed capital and the amount of working capital employed in the cotton industry has recorded a major change, as a consequence of the developments in the production structure and the upward shift of all price levels. In 1937, 53% of the assets of cotton mills were represented by net block expenditure and in 1946, the proportion declined to 22%. In 1950-51, however, the proportion was maintained at the level obtaining in 1946. Conversely, this means that working capital now represents 78% of the assets as against only 47 per cent in 1947. The gradual conversion of assets

into working capital should not be under-estimated in importance on the ground that net block is largely valued at the lower, pre-war prices of purchase. For even after acknowledging that fact, it cannot be disputed that the intake of new assets has been absorbed mainly into assets representing circulating capital.

In the case of the 50 companies, it also appears that, to some extent at any rate, even amortisation quotas have been converted into working capital, especially upto 1946 :—

(in crore Rupees)

	Gross Block Expenditure	Net Block	Depreciation
1937	43	19	24
1946	47	14	33
1950-51	60	20	40

It stands out from the above that notwithstanding the addition of nearly 40% to the value of the gross block between 1937 and 1950, the net block has remained at more or less the same value.

The larger group of 82 companies also yields 76% as the proportion of working capital to total assets and 24% as the net block. Thus confirmed, and interpreted in the manner indicated in the last paragraph, we may generalise that the industry, in general, now has about three-quarters of its total assets employed as working capital, against less than one-half in 1937.

(2) It is also clear that between 1946 and 1950-51, the volume of the gross block expenditure of the 50 companies has advanced from Rs. 47 crores to 60 crores, thereby checking any further increase in the proportion of working capital to total assets.

The operation of these tendencies may also be observed from the value of cotton textile machinery imported during 1946-47 to 1951-52, amounting to Rs. 48 crores. Adding the payments made by way of customs duties, erection charges, the value of machinery (for example, electric motors) which is common to cotton mills as well as other industries, the value of machinery manufactured in the country and the expenditure in buildings and land necessary (if any) for the same, the gross volume of investment in 'fixed' capital for the industry as a whole may be placed probably in the neighbourhood of Rs. 100 crores. About Rs. 70 crores is the gross investment by older mill companies in fixed capital, the rest being accounted for by new companies.

It is to be noted, however, that the volume of working capital presently is 37% above the volume in 1947 although without affecting the ratio of working to 'fixed' capital.

Although the propositions as stated above can be valid only in a general way, there cannot be any doubt about the fact that the management of the assets structure is now principally the management of the flow and the volume of working capital.

(3) Furthermore, a much smaller proportion of the working capital now constitutes cash and other liquid resources. It is also probable that the latter tendency has been particularly strong in the last five years.

In other words, the working capital cycle has been enlarging in scope, but despite the maintenance of higher levels of profit during these years, it has also resulted in a smaller balance of cash and similar resources being left with the mills. This implies that the proportion of assets, more or less immune to changes in the price structure, is now lower than was true in 1946, or even 1937. As a corollary, the liability to be affected by price fluctuations is now greater than it was only five years back.

The greater volume of working capital requirements, as well as the accelerated increase in the outlay on 'fixed' capital have been adjusted to in two ways : (1) a lower volume of cash and other similar liquid resources and (2) increased use of bank credit. The reduced liquidity is reflected in the following figures :—

Cash and Other Liquid Resources (90 Companies)

(in lakh Rupees)

Financial Year ending in	Bombay State	Madras State	Calcutta and Other Centres	Total
1946 ...	1,908	498	632	3,038
1947 ...	1,848	744	739	3,331
1948 ...	1,708	629	541	2,881
1949 ...	1,599	511	380	2,490
1950 ...	1,588	500	388	2,476
1951 ...	1,257	390	365	2,012

The reduction in the above category is juxtaposed below with the volume of bank advances :—

Indices	1946	1947	1948	1949	1950	1951
Cash ...	100	110	94	81	81	66
Bank Advances ...	...	...	100	103	140	165

In brief, continual pressure on and reduction in liquidity, and the rapidly increasing reliance on outside sources of finance are the most significant features of the financial management of cotton mills during the last five years.

Fixed Capital.—Before we proceed to detail the changes in the 'fixed' capital pattern of the industry, a summary of the main magnitudes involved is necessary, and is provided below :—

(in lakh Rupees)

	1937	1946	1950-51	1950-51
	(50 Companies)		(82 Companies)	
Gross Block Expenditure	4,297	4,730	6,003	
Net Block	1,943	1,429	1,982	

The main conclusions to be drawn from the above Table are, firstly, the substantial growth in the volume of block expenditure, and its acceleration after 1946 ; and, secondly, the constancy, more or less, of the volume of net block although we shall see later that the relationship between gross and net block is not as static as the aggregative constancy of the latter indicates.

A tentative territorial picture, on the basis of the 82 companies, is submitted below for 1950-51 :—

—	No. of Companies	Gross Block (in lakh Rs.)	Net Block (in lakh Rs.)	Net Block as % of Gross Block
Bombay City ...	32	3,795	1,115	29%
Ahmedabad ...	11	901	341	37%
South India ...	20	1,509	384	25%
Rest of India ...	19	2,178	1,232	56%
All-India ...	82	8,383	3,072	36%

The higher proportion of the value of net block to the original expenditure in the rest of India, is probably indicative of the fact that mills there have generally been in existence for a shorter period than mills in Bombay or Ahmedabad.

Having appraised the main trends we now consider the pattern of gross block : net block relationship in the two Tables on the next page.

Net Block as Percentage of Gross Block—1937 and 1946
(54 Common Companies)

(in lakh Rupees)

Gross Block	0 to 25%		26 to 50%		51 to 75%		76 to 100%		No. of Companies	
	1937	1947	1937	1947	1937	1947	1937	1947	1937	1947
1. Upto 20 lakhs	...	1	1				1		2	1
2. 21—30	...		2	1	2	2			4	3
3. 31—40	...	1	2	3	3	3			7	5
4. 41—50	...	1	2	1	3	2	1		6	7
5. 51—75	...	1	6	8	6	3	2	1	14	13
6. 76—100	...	1	5	2	3	1	2		5	9
7. 101—150	...	1	2	4	2	3	2	1	9	7
8. 151—200	...		2	3	2				2	5
9. 201—300	...	1	1	2	1				3	2
10. 301—400	...	1	2				1		2	2
		8	23	22	19	16	10	8	2	54

Net Block as Percentage of Gross Block—1950-51

Gross Block	0 to 25%		26 to 50%		51 to 75%		76 to 100%		No of Companies	
1. Upto 20	...	2		4		1			7	
2. 21—30	...	2		4		1	1		8	
3. 31—40	...			2		1			3	
4. 41—50	...	2		3		1	1		7	
5. 51—75	...	5		16		2			23	
6. 76—100	...	4		5		1			10	
7. 101—150	...	1		8		1			10	
8. 151—200	...	1		1					2	
9. 201—300	...	3		3		1			7	
10. 301—400	...	2		1		1			4	
11. 401—500	...									
12. 501 and over	...			1					1	
		22		48		10	2		82	

The broad impression, arising out of the tables, about the increase in the value of gross block is further analysed below :—

Value of Gross Block (in lakh Rupees)	Proportion of companies		
	1937 (54 Common Companies)	1946	1950—51 (82 Companies)
	%	%	%
Upto 50	...	37	29
51—100	...	34	40
101—200	...	21	25
201—500	...	9	8
501 and above	1

It is permissible to conclude from the above that the most marked additive changes to fixed capital are characteristic of the larger companies.

The related tendencies in the relationship of net to gross block are brought together below :—

		Proportion of Companies Having Net Block as Percentage of Gross Block			
		0 to 25%	26 to 50%	51 to 75%	76 to 100%
				%	%
1937	(54 companies)	14	44	30	14
1946	(54 companies)	43	35	18	4
1950-51	(82 companies)	27	59	12	2

In fine, it stands out from the above that the recent investment in fixed capital has been a general tendency shared by all except a few very small companies, although the importance of the new additions undoubtedly varies from company to company.

It also stands to reason from the above that the larger companies are characterised by a higher ratio of net to gross block.

It is interesting to note that the proportion of net to gross block at any given time represents something more than the average life still left in the plant. This is so because of the allowance of sizeable depreciation allowances at the time of the installation of the machinery under the provisions of the law of income taxation. This may be interpreted to mean that the average life of cotton textile plant definitely exceeds one-third, and is probably nearer one-half of its expected life. This, however, does not mean that one-half of the plant is due for replacement. In view of the developments outlined in the chapter dealing with the equipment patterns, it is likely that a substantial proportion of investment decisions has been charged off to revenue, instead of the capital account. When this is so, it may be doubted whether more than a quarter of the existing physical equipment is in need of immediate replacement.

E. SUMMING UP

Many complex factors have been affecting the financial management of the cotton textile industry, especially in the last fifteen years. An increased volume of assets is required for operating cotton mills which has been mainly secured by increasing the reliance on outside finance, especially from the commercial banks. A significantly larger proportion of the assets is employed as working capital than used to

be the case earlier. Finally, the expansive tendencies in the last five years, both in fixed and in working capital, have drastically lowered the volume of liquid resources available with the cotton mills, while raising the general level of amortisation quotas to be provided in the future.

All these create complications in the financial structure which cannot be lightly ignored. The pattern now obtaining is unstable, and what is worse, is highly vulnerable. There is reason to believe that many of the factors at work are permanent in character, and it appears reasonable to assert that financial management shall be more taxing in the future than was the case in the past, and in its turn shall call for greater ingenuity. Indeed, the challenge of financial management emerges as one of the most cogent, and one of the most urgent facts affecting the stability of the cotton mill industry. The return from the seller's market, the higher wage levels and high, uncertain prices of raw materials combine to further underscore the immediate sources of danger to the financial structure of the mill industry.

CHAPTER X

CONCLUSIONS

The propositions crystallising in the course of the present study have been separately stated at the end of each preceding chapter. A résumé is made in these last pages to enable a quick, connected review of these propositions.

1. The first structural aspect surveyed by us is the evolution and the present state of the equipment patterns.

The strength of the early British influence persisted in the mill industry vigorously right upto the end of the nineteenth century, and later declined only gradually in strength.

Looking at the industry as a whole, strong tendencies towards a horizontal type of organisation were discernible upto the end of the nineteenth century. These were considerably modified by the developments in the later years, when the process of vertical integration assumed an accelerated pace. Starting mainly in the thirties, the growth of the powerloom industry having presently more than 30,000 looms, and the rise of a substantial, independent 'processing' industry signify the re-emergence of horizontal tendencies in the mechanised sections of the cotton textile industry.

The technical progress achieved by Indian mills has been substantial, although it was slow in the early stages. The most significant aspect of the equipment patterns obtaining presently is not exhausted by the higher rate of technical progress. There is the equally important factor that mills have built up a substantial measure of capacity to effect further technical changes.

In the spinning section, the most significant development is the growth of fine spinning, and the increase in the average count of yarn spun. Another change of some importance is the growth in the use of raw materials other than cotton. The conversion of spindles to tape and other drives, short-cut processing and other small but numerous changes are important features of mill practice presently. A large measure of variation between mills in the matter of productive efficiency is discernible.

The doubling industry is of recent growth, and now comprises nearly 475,000 spindles. The dispersion pattern reveals remarkable concentration of this equipment with a small number of mills. Sewing thread plants co-exist in some of the mills owning doubling equipment.

The weaving equipment of Indian mills is mostly plain, although the number of dobby looms is sizeable. Special types of looms are a comparatively small proportion of the total number of looms. A large proportion—60 to 65%—of the looms inside Indian mills is of wider width. The automatising of looms has made progress since 1930, but its wider adoption is closely circumscribed by several counteracting factors.

The installation of non-cotton weaving equipment inside mills has made a small measure of progress.

The expansion of the powerloom sector has been remarkable in the last decade. Mainly organised in small units, the powerloom industry utilises largely secondhand machinery, and functions, speaking generally, at a lower level of technical efficiency than mills.

The finishing facilities with mills have been increasing, both in variety and capacity. Calendering, bleaching, yarn dyeing, and dyeing are among the commonest facilities, though these too are not universal. Calico printing and mercerising are two other facilities that are common but only to a lesser extent than the facilities just mentioned. Substantial finishing capacity, mechanical and handicraft, exists outside mills.

In a miscellaniety of other productive diversions, not a few cotton mills have engaged themselves, especially after 1930.

The results may be qualitatively summed up in three phases—diversification of equipment, tendencies toward capital intensification, and the re-emergence of horizontal trends in organisation in an industry where vertical integration has made remarkable progress.

2. Wage rates, after a long period of early stability, have been rapidly adjusting upwards. They display a remarkable range of variation as between different parts of the country, and speaking generally, support a pattern of competitive alignments that has lower labour costs as the mainstay. Legislative intervention has narrowed the range of variations in the last few years.

The other constituents of labour cost—namely, dearness allowance and bonus payments—are unstable in time, and may not be predicted in advance by the individual company with any reasonable measure of certainty. The present levels of dearness allowance payments, and the commonly adopted flat basis of payment lowers the differentials between emoluments of two different occupational categories as stated in the basic wage structure.

The different regional levels of the wage structure have had complex reactions on the composition of the occupational structure, the

general result being an inferior level of labour deployment in low wage areas. To some extent, the latter type of centres have also approached higher levels of deployment. The fine section, in particular, has failed to realise the advantages of a higher level of labour deployment.

Labour unrest manifests itself in strikes, the disinclination to maintain discipline within the factory, and physical assaults on the higher staff of mills.

In brief, labour problems have changed both in their nature and their emphasis during the course of the evolution of the cotton mill industry.

3. The widespread adoption of the corporate form of business organisation, and the prevalence of the managing agency system of top executive management (strongly backed by the strength of the 'proprietorial' element) provide the general background to our study of the organisational set-up.

The rate and patterns of growth, aided by several other factors, have resulted in an increase in the number of functions comprising mill management, and in making it more complex.

The technical cadre has altered in its racial composition, as well as in the matter of minimum levels of qualifications necessary for entry thereto. The managerial function is emerging presently as a distinct, full-time and more complex activity to which non-technicians are being increasingly harnessed. The use of specialists is small, and not always properly understood. The jobber system, as constituted today, is the weakest link in the mill hierarchy. It retards technical progress, fails to achieve effective communication within the work group, and is ineffective as the training ground for recruits to the higher rungs in the organisational set-up.

The inhibiting effects of a system of top executive management in which new recruitment is restricted to a small class, the instability characteristic of the officer cadre, and unstable production schedules comprise the major weak points of cotton mill organisation. Several important aspects, such as accident prevention or labour welfare policies, which could be given an orientation in terms of efficiency, are ignored, or only ineffectively utilised. The tendency to rely on rules of the thumb prevails in considerable strength.

4. The handloom industry was investigated by the Fact-Finding Committee in 1942. The conclusions of the Committee are examined, and the insecure factual and conceptual basis of some of the propositions advanced by them is analysed.

Supported by a reassessment of the broad statistical trends, the economics of technique is demonstrated to be against any extension of handloom weaving in the future. The trend towards higher levels of weaving labour deployment only aggravates the difficulties of handlooms, which perforce, in the future, will be restricted to smaller markets, unless drastic State action comes to their rescue. The tremendous, recurring costs of any effective State action have been clearly indicated.

5. The structure of cotton textile markets is complex, and has become more complex in the inter-war period.

Speaking generally, the total market for yarn contracted drastically after the first decade of the twentieth century, and reached a stage of stability at a lower level thereafter, with some expansion in the thirties and later years. Exports were the earliest to diminish, whereas handlooms have recorded a more gradual decline. Other categories of uses have expanded at a very fast rate, and now consume nearly one-third of the domestic sales of yarn.

The upward trends in the total supply of cloth have been in operation simultaneously with major changes in the relative importance of each supplier. Mills have been the greatest beneficiaries, and imports the largest losers. Handlooms have recorded a decline in the volume of output, relatively as well as proportionately. New sources of supply have appeared, powerloom and hosiery factories being the most important of these. Simultaneously, diversification of production into higher counts of yarn, and of cloth, has taken place.

Exports at a reasonable level are the key to overall stability in the entire cotton textile industry in the immediate future.

6. The emphasis shifted from production to sales in the inter-war period. Idle mills, recurring stock crises and intensified competition, internal as well as external, were among the most significant aspects of the prolonged period of 'weak' selling. The operation of these forces was localised, in the first instance, to Bombay mills. It became, however, universal in the course of the thirties.

A seller's market obtained almost upto the end of 1951, although the climax had probably been reached by 1946 or 1947.

The post-war years saw two major influences at work : conversion of a large section of the industry to fine spinning and weaving, and remarkable year to year instability in the production structure.

1951-52 records a sharp reversal of these tendencies. Higher production and a lower volume of exports have made available an extra 1,200 million yards for internal consumption. The re-emergence of some tendencies similar to those that dominated the market in the inter-war period is of crucial significance.

7. The mill industry upto the beginning of the seller's market of the forties was oriented to wholesaler domination. The most significant functional aspects of the wholesaling agencies were the determination of price differentials between the products of individual mill companies, and the carrying of stocks.

The strength of operation of their influence was drastically subdued in the 1940's. The return to more normal conditions of marketing in 1951-52 has also implied a resumption of their functional role, although it is too early to accurately assess their relative strength in textile marketing presently.

8. Prior to 1939, India constituted an expanding market for cloth, both in terms of the size of the total market, as well as *per capita* availability of cotton textiles. The rate of increase in the latter perceptibly slowed down in the inter-war years.

Greater acceptance of certain dress patterns has evolved in the last few decades. This makes for keener competition between producers in a market that is national rather than regional.

Established dress patterns, sanctioned by tradition and habit, are being increasingly subjected to the influence of many different forces, which detract from the stability of dress patterns.

Rayon has emerged as an important competitor with cotton textile products in the fine section of the mill industry. The points of competitive contact have increased, although they are mainly confined at present to the field of feminine attire.

9. The quantum of financial resources required by the cotton mill industry has increased manifold in the last fifteen years. Simultaneously, the reliance on outside finance has increased, especially after 1946. The main source of outside finance, partly displacing several older agencies, is commercial banks.

Industrial maturity has been a major influence affecting the financial management of mills. It has reflected itself into a slower rate of increase in spinning and weaving equipment, and in the locational pattern of mills in the course of erection. The relationship between the wages paid and the profits earned has altered drastically against the latter. Investors have not altogether failed to recognise the significance of these changes, which have reflected themselves in share prices, on the one hand, and the difference between share prices and intrinsic value, on the other. The proportion of fixed and overhead costs is today higher than used to be the case, which adds to the liability of profits to fluctuate from year to year, and to the complexities of financial management.

The assets structure records, over a period of fifteen years, a rise in the proportion of working capital, from being less than one-half in 1937 to being over three-quarters presently. Furthermore, a smaller proportion of working capital now consists of cash and other similar liquid resources, which implies, *ipso facto*, greater susceptibility to downward price movements.

The volume of gross investment in 'fixed' capital is estimated at Rs. 100 crores for the industry as a whole in the years 1946-47 to 1951-52. Investment in fixed capital has been fairly general, the largest companies recording the greatest increases in the values of fixed capital investment.

The net results of larger requirements of working capital, and the high level of investment in fixed capital are reduced liquidity and a larger measure of reliance on bank credit.

The financial patterns, as now crystallising, are far more complex and more vulnerable.

Between scale of operations and the rate of profit, it is submitted, there is no necessary correlation.

The Indian cotton textile industry, to sum up, emerges in the 1950's with a larger measure of complexity on all sides than was the case at any earlier period of its existence.

APPENDIX

Below is supplied a list of the mills studied for the purposes of the present study : -

BOMBAY :

1. Shree Ram Mills.
2. Khatau Mills.
3. New City Mills.
4. New Great Eastern Mills.
5. Empire Dyeing Works.
6. Swan Mills.
7. Gold Mohur Mills.
8. Finlay Mills.

AHMEDABAD :

1. Arvind Mills.
2. Saraspur Mills.
3. Calico Mills.
4. Rohit Mills.
5. New Commercial Mills.
6. Vijaya Mills.
7. Maheshwari Mills.

DELHI :

1. Delhi Cloth Mills (Nos. 1, 2 & 3).
2. Swatantra Bharat Mills.

COIMBATORE :

1. Laxmi Mills.
2. Coimbatore Spinning & Weaving Mills.
3. Kothari Textiles.
4. Pankaja Mills.
5. P.S.G. Institute.
6. Textools.

MADURA :

1. Madura Mills (Nos. 1 & 2).
2. Pandyan Mills.
3. Balakrishna Mills.
4. Raja Mills.

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